Optimizing Schistosomiasis MDA Implementation

Community Data Analysis Tool

User Guide

World Health Organization
REGIONAL OFFICE FOR Africa

EXPANDED SPECIAL PROJECT FOR ELIMINATION OF NEGLECTED TROPICAL DISEASES

Version 6.0 - 20230915

September 2023

Contents

Abbreviations

BIU	Blood in urine questionnaire test
CCA	Circulating Cathodic Antigen test for S. mansoni detection
ESPEN	Expanded Special Project for Elimination of NTDs
IU	Implementation Unit
JAP	Joint Application Package
JRSM	Joint Request for Selected PC Medicines
MDA	Mass Drug Administration
PC	Preventive Chemotherapy
PZQ	Praziquantel
SAC	School age children
SN	Serial Number
WHO	World Health Organization

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1 Introduction

Based on joint application packages (JAP) received from countries, preventive chemotherapy for schistosomiasis using praziquantel distribution is usually implemented at the district level. This is over a larger spatial scale than may be needed, as schistosomiasis transmission is typically localized to water contact site catchment areas. There are growing concerns around the efficiency of distribution of donated praziquantel, and sub-optimal utilization of site-level data. Therefore, review of sub-district level data may help to better determine appropriate implementation units. To help countries to review their existing data, a data analysis tool has been designed, *"ESPEN sub-district data analysis tool for optimizing schistosomiasis MDA implementation Version 1 Sept 2019".* The data analysis tool is designed in an Excel workbook with automated tasks to process the data, view the results and make decisions. Twenty-four countries have been trained during two workshops in July and August 2019. This document aims to provide users with a guide on how to use the tool.

This guide is structured in three chapters. The first chapter describes the data requirements and the overall structure of the workbook. The second chapter describes the data processing tasks and the third chapter presents the output summary reports and the final output.

2 Data requirement and structures

The workbook contains 15 worksheets which are grouped in 3 categories:

- System or application data (3 worksheets),
- Input data (3 worksheets) and,
- Result outputs (9 worksheets).

The table below show the list of the worksheets and their description.

Table 1: List of workbooks

Category	Worksheet	Description
Application Data	1 -INSTRUCTIONS	General instructions and Collections of Parameters
	2 -Dictionary	Explanatory notes on data items in the workbook
	3 -Dico	Language translation dictionary
Input data	4 -IU_DATA	PC implementation summary data of the IU
	5 -DEMO_DATA	Demographic and PC implementation data on the Community
	6 -EPI_DATA	Epidemiological data on the communities
Results and Outputs	7 -DETAILS	Prevalence, Endemicity and Strategy Calculation
	8 -SUMMARY	Summary data on Endemicity, Strategy and Population
	9 -C_PREVALENCE	Prevalence Data of communities
	10 -D_PREVALENCE	Prevalence data of Districts
	11 -C_PROJECTIONS	Projections of PC implementation data at community level
	12 -D_PROJECTIONS	Projections of PC implementation data at district level
	13 -COMMUNITY_DB	Database of Projections of PC implementation data at community level
	14 -DISTRICT_DB	Database of Projections of PC implementation data at district level
	15 -STATS	Summary analytics

2.1 Application data

The application data consists of all information that is part of the application interface and on which the user has no needs to edit. They are in the worksheets Instructions, Dictionary and Dico.

2.1.1 Worksheet Instructions

This worksheet is the front-end entry point of the tool. It is a composite worksheet as it contains both system information and user data. Its upper section describes briefly all the 15 worksheets and provides a hyperlink to the comprehensive data dictionary section that describes more in detail the worksheets contents. It is also the place where the user will provide some key information such as parameters to the application.

2.1.2 Worksheet Data dictionary

The data dictionary describes the variables used in the worksheets. The descriptions include the titles (group, sub-group, column number, name, and full description), the data type, the input mode (inputted or calculated) and sometime the data source.

2.1.3 Worksheet Dico

The worksheet Dico is an extension of the worksheet Data Dictionary by providing translation of data definition in both English and French. It also contains translation of text data and messages used in the application.

2.2 Input worksheets

There are three input worksheets that constitute the data sources for the input data. They are used at different stages of calculations.

2.2.1 Demographic data of the communities

The worksheet demo_data is the data source for the demographic data of the communities. It must contain the complete list of all communities in the country whether endemic or not for schistosomiasis. The data items are as shown in the table below. It also provides additional data on the urbanization level, the schistosomiasis transmission risk, and the preventive chemotherapy history.

Table 2: Demographic data structure

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category	Column number	Variable	Description	Data Type	Input Mode
Geography	1	SN	Incremental number of the sub-IU	T	Inputted
	2	Country	Name of the country	T	Inputted
	3	ISO3	ISO 3 characters code of the country	T	Inputted
	4	Admin_1	Administrative level 1 (usually the level immediately above the IU)	T	Inputted
	5	Admin_2 (IU)	Administrative level representing the IU (implementation unit)	T	Inputted
	6	ESPEN_IU_ID	ESPEN internal ID for the IU	T	Inputted
	7	Community	Community name (may not be always the admin 3, but much lower – must be any level below the district level)	T	Inputted
	8	Community ID	Internal code of the community	T	Calculated
Demography	9	Year of population	Year of population	N	Inputted
	10	Total Population	Total Population	N	Inputted
	11	Adjusted Population	Total population of the sub-district adjusted to the total population of the district so that the sum of community populations is equal to the district total population	N	Calculated
	12	PreSAC Population	Preschool age children Population	N	Calculated
	13	SAC Population	School age children Population	N	Calculated
	14	Adult Population	Adult Population	N	Calculated

Category	Column number	Variable	Description	Data Type	Input Mode
	15	WRA Population (15-49 years)	Women of reproductive Age (15-49 years) Population	N	Calculated
	16	WRA Population (15-24 years)	Women of reproductive Age (15-24 years) Population	N	Calculated
	17	Percentage of PreSAC (%)	Percentage of preschool age children (%)	N	Inputted
	18	Percentage of SAC (%)	Percentage of school age children (%)	N	Inputted
	19	Percentage of adults (%)	Percentage of adults (%)	N	Inputted
	20	Percentage of WRA 15 to 49 years (%)	Women of reproductive Age, 15-49 years (%)	N	Inputted
	21	Percentage of WRA 5 to 24 years (%)	Women of reproductive Age, 15-24 years (%)	N	Inputted
	22	Annual Population Growth Rate (%)	The annual population growth rate of the sub-district if available, otherwise the one of the IU, Province or national	N	Inputted
Preventative Chemotherapy History	23	Annual Population Growth rate (World bank 2021) %	Annual Population Growth rate (World bank 2021) %	N	Inputted
	24	Transmission risk level	Level of schistosomiasis transmission risk (o= no risk, 1=low, 2=moderate, 3=high, 4=uncategorized)	TP	Inputted
	25	Community classification	Classification of the community with respect to development profile (Urban, peri-urban, rural)	TP	Inputted
	26	Year of the mapping survey	Year of the mapping survey	N	Inputted
	27	First year of PC	Year of first PC round as part of integrated programme (exclusive of isolated PC)	N	Inputted
	28	Number of PC rounds received	Total number of PC round received	N	Inputted
	29	Number of effective PC rounds received	Number of effective (PC coverage >=75%) PC round received	N	Inputted

Notes: The column number is considered as the reference used by the application to access the data in the column and should not be interchanged in any way.

2.2.2 Epidemiological data structure

The worksheet epi_data is the data source for the epidemiological data. It must provide all available site level survey data. The data items are as shown in the table below.

Table 3: Epidemiological data structure

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category	Column number	Variable	Description	Data Type	Input Mode
Geography	1	SN	Incremental number of the sub-IU	T	Inputted
	2	Country	Name of the country	T	Inputted
	3	ISO3	ISO 3 characters code of the country	T	Inputted
	4	Admin_1	Administrative level 1 (usually the level immediately above the IU)	T	Inputted
	5	Admin_2 (IU)	Administrative level representing the IU (implementation unit)	T	Inputted
	6	IU ID	ESPEN internal ID for the IU	T	Inputted
	7	Community	Community name (may not be always the admin 3, but much lower – must be any level below the district level)	T	Inputted
	8	Community ID	Internal code of the community	T	Inputted
	9	Site	Name of the survey site	T	Inputted
	10	Latitude	Latitude in decimal degrees	T	Inputted
	11	Longitude	Longitude in decimal degrees	T	Inputted
Epidemiology	12	Survey Type	The type of survey (Baseline, Impact)	PT	Inputted
	13	Examined	Number of people examined	N	Inputted
	14	Positive	Number of people positive	N	Inputted
	15	Prevalence (%)	Prevalence rate calculated as percentage (positive/examined*100)	N	Inputted
	16	Methods	Methods of diagnostic	PT	Inputted
	17	Year of survey	Year of survey	N	Inputted
	18	Type of schistosomiasis	Type of schistosomiasis	T	Inputted
	19	Diagnostic Type	Type of diagnostic methods (parasitological, serological, qualitative, etc.)	T	Inputted
	20	Source	Source of the data	T	Inputted
	21	Quality Degree	Degree of quality of epidemiological data (1=Good, 2=Acceptable, 3=Poor)	N	Calculated
Preventive Chemotherapy History	22	Classification (by programme)	Classification (by survey type by NTD programme	T	Inputted
	23	Classification (by analysis)	Classification by analysis of PC History by the tool	PT	Calculated
	24	First PC Year	First PC Year (same as in the demographic dataset)	N	Inputted
	25	Latest PC Year	Latest PC Year (same as in the demographic dataset)	N	Inputted
	26	# of PC rounds	# of PC rounds (same as in the demographic dataset)	N	Inputted

Notes:
The column number is considered as the reference used by the application to access the data in the column and should not be interchanged in any way.

2.2.3 District data structure

The worksheet IU_Data provides the endemicity category reported in the most recent drug request in the district. The data items are as in the table below.

Table 4: Structure of the endemicity and population data of the district

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category	Column number	Variable	Description	Data Type	Input Mode
Geography	1	SN	Incremental number of the sub-district	T	Inputted
	2	Country	Name of the country	T	Inputted
	3	ISO3	ISO 3 characters code of the country	T	Inputted
	4	Admin_1	Administrative level 1 (usually the level immediately above the IU)	T	Inputted
	5	Admin_2 (IU)	Administrative level representing the IU (implementation unit)	T	Inputted
	6	ESPEN_IU_ID	ESPEN internal ID for the IU	T	Inputted
Demography	7	Population	Total population of the IU	N	Inputted
	8	Year	Reporting Year	N	Inputted
Epidemiology	9	Endemicity	Endemicity Code or full description	N	Inputted
	10	Short description	Endemicity short description	PT	Inputted
	11	Final Endemicity Code	The endemicity category for the district after the sub-district analysis (highest endemicity among the sub-district)	N	Calculated
Preventive Chemotherapy History	12	Number of PC rounds received	Total number of PC rounds received	N	Inputted
	13	First PC year	First year of PC	N	Inputted
	14	Last PC year	Last year of PC	N	Inputted
	15	Number of effective PC rounds	Total number of effective PC rounds received	N	Inputted

Notes
There are 5 categories of endemicity descriptions that should be coded in the column of short description as not endemic, Low, Moderate, High, and Unknown. The column number is considered as the reference used by the application to access the variable data in the column and should not be interchanged in any way.

2.3 Analysis and Output Worksheets

There are nine analysis and output worksheets. The analysis is done in 3 steps. The table below shows the steps, the operations, and the target worksheets.

Table 5: Calculation operations and target worksheets

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Steps	Worksheet	Operations and/or Calculations
Prevalence, Endemicity, Treatment Strategy and Populations calculations	Details	District baseline and impact prevalence and endemicity calculation
		Community baseline and impact prevalence and endemicity calculation
		Community treatment strategy calculation
	Summary	Review and Revision of treatment strategy calculated
		Calculation of population requiring PC
Projections Calculations	C_Projections	Treatment Plan Projection
		Community level projections
	D_Projections	District level projections
Projections Databases	Community_DB	Building of the Community level projection database

2.3.1 District and Community levels Analysis

The district and community levels analysis are performed in the worksheet named Details. Its structure has different sections: geography, demography, district level data and parameters, community level data and parameters.

2.3.1.1 Geography section

The geography section is the same as in the demographic and epidemiological worksheets. It is the replication of the same information in the demographic data worksheet.

Table 6: Structure of the geographic data on the sub-district

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category	Column number	Variable	Description	Data Type	Input Mode
Geography	1	SN	Incremental number of the sub-IU	T	Inputted
	2	Country	Name of the country	T	Inputted
	3	ISO3	ISO 3 characters code of the country	T	Inputted
	4	Admin_1	Administrative level 1 (usually the level immediately above the IU)	T	Inputted
	5	Admin_2 (IU)	Administrative level representing the IU (implementation unit)	T	Inputted
	6	ESPEN_IU_ID	ESPEN internal ID for the IU	T	Inputted

Category	Column number	Variable	Description	Data Type	Input Mode
	7	Community	Community name (may not be always the admin 3, but much lower – must be any level below the district level)	T	Inputted
	8	Community ID	Internal code of the community	T	Calculated

2.3.1.2 Epidemiology section

The epidemiological data values are calculated from the data stored in the epidemiological data worksheet. From the site level data, a prevalence is calculated for the district and for the community for each diagnostic method for which data is available. The disaggregation levels of the prevalence are:

- The survey type (baseline or impact assessment)
- The year
- The diagnostic method

For each survey type, the most suitable prevalence is calculated with the latest year and the most suitable diagnostic method.

The epidemiological section is divided into two groups: one for the district level data and another for the community level data. The 2 groups have a set of the same variables and some additional variables for the community level data.

Though the district level data are calculated, they are not used in the rest of the process. They are provided for information only. Only the community level data structure will be discussed.

The table below shows the structure of variables calculated for the community level epidemiology.

Table 7: Structure of the epidemiological data on the sub-district

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category		Column number	Variable	Description and calculation rules	Data Type	Input Mode
Community Level Epidemiology	Community Baseline Prevalence	20	Diagnostic Methods	The most suitable diagnostic methods	TPV	Calculated
		21	Prevalence	The prevalence by the most suitable diagnostic methods and the latest year	N	Calculated
		22	Number of sites	Number of sites for the diagnostic methods and the year	N	Calculated
		23	Year	Latest year of baseline survey	N	Calculated
		24	Endemicity level	Endemicity category	TPV	Calculated
	Community Latest Impact Assessment Prevalence	25	Diagnostic Methods	The most suitable diagnostic methods	TPV	Calculated
		26	Prevalence	The prevalence by the most suitable diagnostic methods and the latest year	N	Calculated

Category		Column number	Variable	Description and calculation rules	Data Type	Input Mode
		27	Number of sites	number of sites for the diagnostic methods and the year	N	Calculated
		28	Year	Latest year of impact assessment survey	N	Calculated
		29	Endemicity level	Endemicity category	TPV	Calculated
	Community Final Endemicity and Treatment Strategy	30	Endemicity	Endemicity by the new guidelines	TPV	Calculated
		31	Source	Source of the endemicity (baseline, impact or risk assessment, district, community)	TPV	Calculated
		32	Code	Code of the endemicity	NPV	Calculated
		33	Treatment Strategy	Treatment strategy by the	TPV	Calculated
	Program History	34	Mapping due	Mapping due (0= no need of mapping, either baseline or impact prevalence exist, 1=mapping is due, no prevalence data exists	NPV	Calculated
		35	Impact assessment due	Impact assessment due (0= no needs of impact assessment, 1= impact prevalence does not exist)	NPV	Calculated
		36	Number of PC rounds received	Category of number of PC rounds received	TPV	Calculated

2.3.2 Prevalence calculation results

There are 2 worksheets where prevalence calculated for the districts and sub-districts are stored.

2.3.2.1 Subdistricts Prevalence calculation results

The worksheet C_Prevalence stored all prevalence values for the subdistricts. The prevalence values are disaggregated by the diagnostic methods, the year, and the survey type. Each value is calculated according to the method of calculation selected (mean or maximum). The table below illustrates the structure of the worksheet C_Prevalence.

Table 8: Structure of the prevalence values of the subdistricts

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category	Column number	Variable	Description	Data Type	Input Mode
Administrative Units	1	SN	Incremental number of the sub-IU	N	Inputted
	2	Country	Name of the country	T	Inputted
	3	ISO3 Code	ISO 3 characters code of the country	T	Inputted
	4	Province	Administrative level 1 (usually the level immediately above the IU)	T	Inputted
	5	District (IU)	Administrative level representing the IU (implementation unit)	T	Inputted
	6	IU ID	ESPEN internal ID for the IU	N	Inputted
	7	Community	Community name (may not be always the admin 3, but much lower – must be any level below the district level)	T	Inputted
	8	Community ID	Internal code of the community	T	Inputted
Epidemiology	9	Diagnostic Methods	Diagnostic methods	TPV	Calculated
	10	Examined	Number of people examined	N	Calculated
	11	Positive	Number of positive tests	N	Calculated
	12	Prevalence (%)	Prevalence (%)	N	Calculated
	13	Number of sites	Number of sites for the diagnostic methods and the year	N	Calculated
	14	Year of survey	Year of survey	N	Calculated
	15	Survey type	Type of survey	TPV	Calculated

2.3.2.2 Districts Prevalence calculation results

The worksheet D_Prevalence stored all prevalence values for the districts. The prevalence values are disaggregated by the diagnostic methods, the year, and the survey type.
The table below illustrates the structure of the worksheet D_Prevalence.

Table 9: Structure of the prevalence values of the districts

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category	Column number	Variable	Description	Data Type	Input Mode
Administrative Units	1	SN	Incremental number of the sub-IU	N	Inputted
	2	Country	Name of the country	T	Inputted
	3	ISO3 Code	ISO 3 characters code of the country	T	Inputted
	4	Province	Administrative level 1 (usually the level immediately above the IU)	T	Inputted
	5	District (IU)	Administrative level representing the IU (implementation unit)	T	Inputted
	6	IU ID	ESPEN internal ID for the IU	N	Inputted
	7	Community	Community name (may not be always the admin 3, but much lower – must be any level below the district level)	T	Inputted
	8	Community ID	Internal code of the community	T	Inputted

Category	Column number	Variable	Description	Data Type	Input Mode
Epidemiology	9	Diagnostic Methods	Diagnostic methods	TPV	Calculated
	10	Examined	Number of people examined	N	Calculated
	11	Positive	Number of positive tests	N	Calculated
	12	Prevalence (%)	Prevalence (%)	N	Calculated
	13	Number of sites	Number of sites for the diagnostic methods and the year	N	Calculated
	14	Year of survey	Year of survey	N	Calculated
	15	Survey type	Type of survey	TPV	Calculated

2.3.3 Community Summary worksheet

The community summary worksheet named "Summary" is a compacted dataset from the global details analysis. It has additional data processing capability. Its structure has 3 sections: geography, epidemiology, and populations estimations.

2.3.3.1 Geography section

The geography section is the same as in the demographic and epidemiological worksheets. It is the replication of the same information in the demographic data worksheet.

2.3.3.2 Epidemiology section

The epidemiology section has 4 indicators which are the endemicity calculated and the treatment strategy.

2.3.3.3 Estimation section

This section calculates the population requiring PC in each population age group according to the treatment strategy.

The table below illustrates the data structure in the summary worksheet.

Table 10: Structure of the summary sub-district data

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category	Column number	Variable	Description and calculation rules	Data Type	Input Mode
Administrative Units	1	SN	Incremental number of the community	T	Inputted
	2	Country	Name of the country	T	Inputted
	3	ISO3 Code	ISO 3 characters code of the country	T	Inputted
	4	Province	Administrative level 1 (usually the level immediately above the IU)	T	Inputted
	5	District (IU)	Administrative level representing the IU (implementation unit)	T	Inputted
	6	IU ID	ESPEN internal ID for the IU	T	Inputted
	7	Community	Community name (may not be always the admin 3, but much lower – must be any level below the district level)	T	Inputted

Category	Column number	Variable	Description and calculation rules	Data Type	Input Mode
	8	Community ID	Internal code of the community	T	Inputted
Community Endemicity and Treatment Strategy	9	Endemicity	Endemicity by the new guidelines	TPV	Calculated
	10	Code	Code of the endemicity	NPV	Calculated
	11	Calculated Strategy	Treatment strategy by the new guidelines	TPV	Calculated
	12	Validated Strategy	Treatment strategy by the new guidelines (validated)	TPV	Inputted Calculated
Population Requiring Preventive Chemotherapy	13	PreSAC	Preschool children population requiring PC	N	Calculated
	14	SAC	School age children population requiring PC	N	Calculated
	15	Adults	Adult population requiring PC	N	Calculated
	16	WRA (15-49 years)	WRA (15-49 years) population requiring PC	N	Calculated
	17	WRA (15-24 years)	WRA (15-24 years) population requiring PC	N	Calculated

2.3.4 Treatments projections worksheet

The treatment projection worksheet has 6 sections.

2.3.4.1 Geography

The geography section is the same as in the demographic and epidemiological worksheets. It is the replication of the same information from the demographic data worksheet.

2.3.4.2 Epidemiology

The epidemiology section has 2 indicators which are the endemicity calculated and the validated treatment strategy. They are replicated from the summary worksheet.

2.3.4.3 Treatment plan projection

The treatment plan is projected for five years. The first-year plan is set to one for all community that need MDA regardless the frequency; and to zero for all others (PC not required, test and treat, unknown endemicity, No data).

2.3.4.4 Annual Treatment Projections

The annual treatment projections have 3 sub-categories:

- Population requiring PC
- Population estimated for PC in the year
- PZQ estimated for PC in the year

The estimations are done for five population groups

The table below illustrates the data structures in the projection worksheets

Table 11: data structures in the projection worksheets

Data type legend: T=Text, N=Numeric, TPV=text predefined value, NPV=Numeric predefined value

Category		Column number	Variable	Description	Data Type	Input Mode
Administrative Units		1	SN	Incremental number of the sub-IU	T	Inputted
		2	Country	Name of the country	T	Inputted
		3	ISO3	ISO 3 characters code of the country	T	Inputted
		4	Admin_1	Administrative level 1 (usually the level immediately above the IU)	T	Inputted
		5	Admin_2 (IU)	Administrative level representing the IU (implementation unit)	T	Inputted
		6	ESPEN_IU_ID	ESPEN internal ID for the IU	T	Inputted
		7	Community	Community name (may not be always the admin 3, but much lower – must be any level below the district level)	T	Inputted
		8	Community ID	Internal code of the community	T	Inputted
Epidemiology		9	Endemicity level	Endemicity level of the community	TPV	Calculated
		10	Treatment strategy	Treatment strategy based on endemicity level	TPV	Calculated
Treatment Plan Projection		11	Year 1	First year treatment plan	N	Calculated
		12	Year 2	Second year treatment plan	N	Calculated
		13	Year 3	Third year treatment plan	N	Calculated
		14	Year 4	Fourth year treatment plan	N	Calculated
		15	Year 5	Fifth year treatment plan	N	Calculated
Annual Treatment Projections	Population requiring PC	16	PreSAC Requiring PC	Number of pre-school age children requiring PC	N	Calculated
		17	SAC Requiring PC	Number of school age children requiring PC	N	Calculated
		18	Adult Requiring PC	Number of adults requiring PC (include women of reproductive age)	N	Calculated
		19	WRA Requiring PC (15-49 years)	Number of women of reproductive age requiring PC (15-49 years)	N	Calculated

Category		Column number	Variable	Description	Data Type	Input Mode
		20	WRA Requiring PC (15-24 years)	Number of women of reproductive age requiring PC (15-24 years)	N	Calculated
		21	Total Requiring PC	Total number of people requiring PC (pre-school age children, school age children and adults)	N	Calculated
		22	Number of communities to treat	Number of PC round to be delivered in the year (can be 0, 1 or 2)	N	Calculated
	Population estimated for PC in the year	23	PreSAC Estimations for Rx	Number of pre-school age children to be treated	N	Calculated
		24	SAC Estimations for Rx	Number of school age children to be treated	N	Calculated
		25	Adult Estimations for Rx	Number of adults to be treated (include women of reproductive age)	N	Calculated
		26	WRA Estimations for Rx (15-49 years)	Number of women of reproductive age to be treated (15-49 years)	N	Calculated
		27	WRA Estimations for Rx (15-24 years)	Number of women of reproductive age to be treated (15-24 years)	N	Calculated
		28	Total Estimations for MDA	Total number of people to be treated (pre-school age children, school age children and adults)	N	Calculated
	PZQ estimated for PC in the year	29	PZQ for PreSAC	Number of PZQ tablets for pre-school age children	N	Calculated
		30	PZQ for SAC	Number of PZQ tablets for school age children	N	Calculated
		31	PZQ for adults	Number of PZQ tablets for adults (include women of reproductive age)	N	Calculated
		32	PZQ for WRA (15-49 years)	Number of PZQ tablets for women of reproductive age (15-49 years)	N	Calculated
		33	PZQ for WRA (15-24 years)	Number of PZQ tablets for women of reproductive age (15-24 years)	N	Calculated
		34	PZQ Total	Total number of PZQ (pre-school age children, school age children and adults)	N	Calculated

2.4 Calculation rules and methods

2.4.1 Community population adjustment

The community population adjustment is done when there is an important gap between the district population and the sum of the populations of the communities within the district. The tool provides the possibility to define the threshold for the adjustment. The threshold is defined as the percentage of the difference between the two populations compared to the population of the district. The default value is zero which means that the adjustment will take place anyway.

Example of calculation

The total population of the community is adjusted to the total population of the district so that the sum of community populations is equal to the district total population.

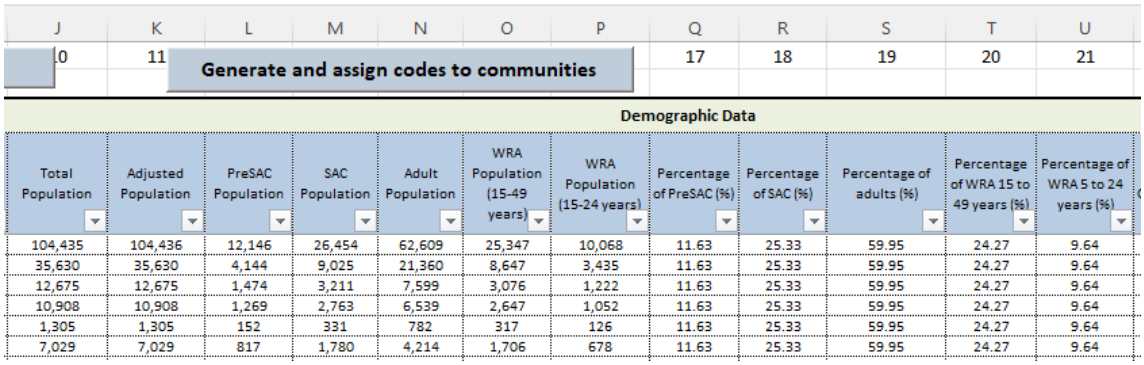
District Population	**409,424**	**PT**		
Total from communities	437,204	PC		
Gap	-27,780	G=PT-PC		
% Gap	-6.79%	Gp=G/PT*100		
Total adjusted	409,424			
	P	W=P/PC	C=PC*W	A=P+C
Community	Population	Weight	Compensation	Adjusted
COM 1	8,030	1.84%	-510	7,520
COM 2	27,624	6.32%	-1755	25,869
COM 3	176,689	40.41%	-11227	165,462
COM 4	118,975	27.21%	-7560	111,415
COM 5	105,886	24.22%	-6728	99,158
	437,204	**100.00%**	**-27,780**	**409,424**

2.4.2 Subgroup population calculations

The calculation of sub-district populations is based on the adjusted figures. The population of each subgroup is calculated as follow:

Sub-group population = (adjusted population) x (sub-group percentage)

The figure below illustrates the subgroup populations and percentages.



J	K	L	M	N	O	P	Q	R	S	T	U
10	11	Generate and assign codes to communities					17	18	19	20	21
							Demographic Data				
Total Population	Adjusted Population	PreSAC Population	SAC Population	Adult Population	WRA Population (15-49 years)	WRA Population (15-24 years)	Percentage of PreSAC (%)	Percentage of SAC (%)	Percentage of adults (%)	Percentage of WRA 15 to 49 years (%)	Percentage of WRA 5 to 24 years (%)
104,435	104,436	12,146	26,454	62,609	25,347	10,068	11.63	25.33	59.95	24.27	9.64
35,630	35,630	4,144	9,025	21,360	8,647	3,435	11.63	25.33	59.95	24.27	9.64
12,675	12,675	1,474	3,211	7,599	3,076	1,222	11.63	25.33	59.95	24.27	9.64
10,908	10,908	1,269	2,763	6,539	2,647	1,052	11.63	25.33	59.95	24.27	9.64
1,305	1,305	152	331	782	317	126	11.63	25.33	59.95	24.27	9.64
7,029	7,029	817	1,780	4,214	1,706	678	11.63	25.33	59.95	24.27	9.64

2.4.3 Survey classification

The differentiation of surveys into baseline and impact is one of the important considerations in this revision. The tool determines the type of survey using available historical data on PC implementation within the subdistrict. However, if those data items are not available for the subdistrict, then the tool use the district data in lieu of. The data items used to classify surveys are:

- The year of the survey
- The first year of PC
- The latest year of PC
- The number of PC rounds received

Because those data may noy be all available or not accurate, the results may not be also accurate. Therefore, it is recommended that the national NTD team interactively explore the results in subdistricts.

2.4.4 Community prevalence, endemicity and treatment strategy

2.4.4.1 Community prevalence

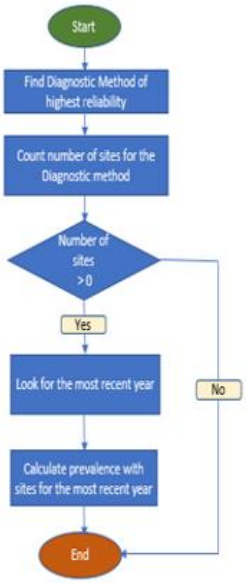
The community prevalence is calculated from epidemiological data. The method of calculation uses some parameters that are to be set on the instructions page. Those parameters are:

- The calculation formula: the community prevalence can be calculated as the average prevalence value within the entire sub-district or as the maximum value of site prevalence values within the sub-district.

- Minimum sample size: this additional condition excludes all site prevalence where the number of people examined is below the minimum sample size. The default value is 15. It is applied only when the calculation formula is the maximum value.

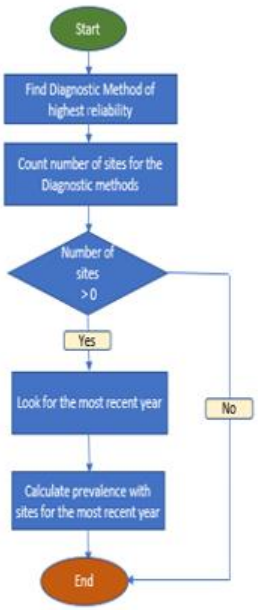
The prevalence is calculated for all diagnostic methods and all years for which data are available and met the calculations conditions. The figure below shows the algorithm for the prevalence calculation.

(a) Prevalence calculated by the mean



Prevalence = SUM(Positives)/SUM(Examined) x 100

(b) Prevalence calculated by the maximum



Prevalence = MAX(of all site prevalence)

2.4.4.2 Community endemicity category by survey data

Among all prevalence values calculated above, the one used to determine the endemicity category is for the latest year and the most suitable diagnostic methods for each survey type. The figure below illustrates the quality grading of the diagnostic methods.

Table 12: Classification of diagnostic methods

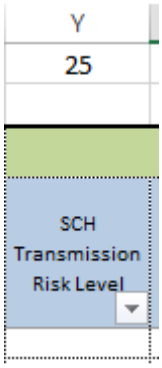
Diagnostic method	Quality
Urine Filtration/Kato-	1
Urine Filtration	1
Kato-Katz	1
Urine Sedimentation	1
Dipstick	2
BIU	2
CCA	3

Rank of diagnostic methods from highest to lowest suitability

2.4.4.3 Community endemicity category by risk evaluation data

The tool provides the possibility to use if available the schistosomiasis transmission risk data. Such data must be converted into endemicity category (not endemic, low, moderate, and high) and will be used in the absence of baseline and impact data. However, the consideration of using such data is an option on the instruction page.

33	Use transmission risk data if available:	**Yes**



Choosing "Yes" means that the data are provided in the community demographic dataset in the column Y in numerical values as indicated below:

Value	Description
0	Not endemic
1	Low
2	Moderate
3	High
Blank, or any other value	Unknown

2.4.4.4 Community treatment strategy

The community prevalence and endemicity category are calculated separately for baseline and impact surveys. The treatment strategy is determined according to the new guidelines. The table below summarize the decision tree:

Table 13: Treatment strategies by the prevalence

Type of survey	Prevalence	Endemicity category	Treatment strategy
Baseline	0	Not endemic	No PC required
	<10%	Low	No PC
	10-49%	Moderate	1 round every year
	50% and above	High	1 round every year
Impact	<1%	Low	Test and Treat
	<10%	Low	1 round every 3 year or Test and Treat
	10-49%	Moderate	1 round every year
	50% and above	High	1 round every year or 2 rounds every year
No survey data	Unknown	Unknown	No PC

The table in annex 1 illustrates the detailed decision tree, and showing how the hotspots are determined.

2.4.5 Calculation of population requiring PC

The population requiring PC is divided into 2 categories: the population requiring MDA and the population for test and treat situation. However, only the population requiring MDA appears in the worksheets. The second category is only used for praziquantel estimations.

Table 14: Methods of estimation of people needing PC according to the treatment strategy

Treatment strategy	Subgroup requiring MDA	Total population requiring MDA	Notes
PC not required	0	0	
Test and treat	0	0	However, a fixed percentage (1% by default) of the population is used to estimates PZQ in each population subgroup

Treatment strategy	Subgroup requiring MDA	Total population requiring MDA	Notes
1 round every 3 years	Total population in the subgroup	Total of PreSAC, SAC and adult subgroups	It is the number of people to treat in the year MDA is planned. It is zero in the year MDA is skipped
1 round every 2 years	Total population in the subgroup	Total of PreSAC, SAC and adult subgroups	
1 round every year	Total population in the subgroup	Total of PreSAC, SAC and adult subgroups	
2 rounds every year	Total population in the subgroup	Total of PreSAC, SAC and adult subgroups	The drugs estimations are multiplied by 2

The population requiring PC are calculated in the worksheet Summary for the first year of the projections.

The figure below illustrates the results for the calculation of the population requiring PC.

Table 15: Extract of the worksheet Summary showing the population requiring PC

K	L	M	N	O	P	Q
11	12	Calculate Population Requiring PC				17
ity and Treatment Strategy		Population Requiring Preventive Chemotherapy 2024				
Calculated Strateg	Validated Strategy	PreSAC	SAC	Adults	WRA (15-49 years)	WRA (15-24 years)
PC not required	PC not required	0	0	0	0	0
1 round every 3 years	1 round every 3 years	1,314	4,361	9,964	4,033	1,798
PC not required	PC not required	0	0	0	0	0
1 round every year	1 round every year	3,419	11,350	25,929	10,493	4,680
1 round every 3 years	1 round every 3 years	977	3,244	7,412	3,000	1,338
No data	No data	0	0	0	0	0

2.4.6 Calculation of treatment projections

The projections are calculated in the worksheet C_Projections and summarized by district in the worksheet D_Projections.

2.4.7 Treatment plan projections

The treatment plan indicates for each year of the projection if treatment is planned. The decision to treat depends on the treatment strategy in the community. The table below illustrates the treatment plans for the treatment strategies.

Table 16: Example of treatment plan projection

Treatment strategy	Year 1	Year 2	Year 3	Year 4	Year 5
Test and treat	0	0	0	0	0
1 round every 3 years	1	0	0	1	0
1 round every 2 years	1	0	1	0	1
1 round every year	1	1	1	1	1
2 rounds every year	1	1	1	1	1

The simulation above assumes that a treatment occurs in the first year for all communities that require PC. This assumption is made by default for all sub districts. However, the treatment plan can be revised for the first year according to the treatment history of the sub-districts.

2.4.8 Treatment needs projections

The projections are calculated for 4 indicators: the population requiring PC, the number of communities to treat, the estimated people to treat and the estimation of PZQ.
The populations and the PZQ estimations are disaggregated into the population subgroups.

The table below illustrates the calculation rules of the indicators.

Table 17: Methods of calculations of the projections data

Indicator	Treatment strategy	Calculation rules
Population requiring PC **PreSAC** **SAC** **Adult** **WRA (15-49 years)** **WRA (15-24 years)**	1 round every 3 years 1 round every year 2 rounds every year	It is the total population of the corresponding age group in the endemic community multiplied by the population growth rate factor for the projection year. The population growth factor is: (1 + NGR / 100) ^ (Yi – Yo) NGR is the population growth rate in the community. Yo is the reference year Yi is the projection year
	Test and treat	• Option to use fixed percentage (default value is 1%) • Option to use the community prevalence rate It the total population requiring PC of the corresponding age group in the endemic community multiplied by the fixed percentage or the epidemiological prevalence percentage
Total Requiring PC	All applicable	Total population (as defined above) of PreSAC, SAC and adults
Number of communities to treat	All applicable	Number of communities in the endemic areas to be treated according to the treatment plan
Estimated populations to be treated. **PreSAC, SAC, Adult,** **WRA (15-49 years),** **WRA (15-24 years)**	All applicable	• If treatment is planned It is the total population requiring PC • It is 0 if no MDA is planned (1 round every 3 years, 1 round every 2 years)
Total estimated population to be treated yearly	All applicable	It is the sum of PreSAC, SAC, and adult populations estimated to be treated. This represents the denominator to use to calculate the epidemiological coverage after MDA
PZQ for PreSAC (150 mg)	All applicable	• PreSAC estimated population to be treated multiplied by PZQ dosage for PreSAC (1 tablet per person) • Provisions in test and treat communities
PZQ for SAC (600 mg)	All applicable	• SAC estimated population to be treated multiplied by PZQ dosage for SAC (2 tablets per person) • Provisions in test and treat communities
PZQ for adults (600 mg)	All applicable	Adult estimated population to be treated multiplied by PZQ dosage for adults (3 tablets per person)

Indicator	Treatment strategy	Calculation rules
		• Provisions in test and treat communities
PZQ for WRA (15-49 years) (600 mg)	All applicable	WRA (15-49 years) estimated population to be treated multiplied by PZQ dosage for adults (3 tablets per person) • Provisions in test and treat communities
PZQ for WRA (15-24 years) (600 mg)	All applicable	WRA (15-24 years) estimated population to be treated multiplied by PZQ dosage for adults (3 tablets per person) • Provisions in test and treat communities
PZQ Total (600 mg)	All applicable	It is the sum of SAC and adult estimations of PZQ

Notes: The PZQ provisions in test and treat communities is estimated by using a given percentage of the population in the communities. This percentage by default is 1% but may be adjusted for the specific country.

3 Data Processing

3.1 Data Preparation

The data preparation task consists of filling in the input data worksheets with the available datasets for the analysis. Three worksheets are concerned by this task: demographic data worksheet, epidemiological data worksheet, district data worksheet. Each data set if available must be prepared and formatted strictly in conformity with the worksheet structures as described in the first chapter of this guide.

3.1.1 Filling in the input worksheets

There are no standard methodologies provided in this guide about how to fill in the worksheets. The data can be prepared in a separate workbook and transferred into the tool workbook. You can do the transfer by copy and paste or by the built-in task “Import data”. The second option means that that the data is well formatted as described in the first chapter. Whichever way you choose, below are some recommendations:

- Take enough time to prepare the dataset in a separate worksheet or in any other application where the data might have been previously stored (e.g. MS access database, SPSS, DHIS2, etc.) or where you fill more comfortable, especially if the data is not yet analyzed as required by the analysis and needs some reworks before (e.g. calculate site prevalence from individual records, linking demographic or epidemiological data to shapefiles in order to link them to their communities).
- Format the dataset in the same structure as in the destination worksheet.
- No full blank row is allowed.
- No full blank column is allowed except if it is in the structure, but the data is not available.
- No merged cell is allowed in the dataset.
- Cell formatting such as background and fore color, font properties, framing are allowed.
- Avoid formatting the worksheet out of the actual data range.
- Make sure that there are no blank rows at the bottom of the dataset.
- You can keep the column titles (description) as they are, or you can rewrite them in your own way. But you must keep in mind that the data type in the column should not change (e.g., in the demographic data worksheet, the name of column 7 is “Admin_3 (sub-IU, sub-district)” and meant to store the sub-IUs names. You can change the title to sub-district, Sub-County, ward, parish etc. if that is the name of the sub-IU in the country.

3.1.2 Data cleaning and quality check

Once you have filled in the worksheet either in the data analysis template or in another workbook or tool, you can proceed to the next important step which is data cleaning. The data cleaning will mostly concern the data values and characteristics.

3.1.2.1 Geographical unit names and spellings

- Make sure that all geographical unit (admin1, admin2, admin3) names are written correctly and in the same way wherever they appear. They appear in the three input worksheets.
- Remove any useless spaces at the beginning or at the end of the names (it happens very often that spaces are left inadvertently at the extremities of words)
- Compound names should be separated by a straight dash (-) and not an underscore (_). No space is needed on the left and right of the dash.

- The use of a slash (/) to separate compound names can conflict with some data processing tools where slash is used as a special or reserved character. So, avoid the use of the slash as much as possible in compound names.
- If you have numbered names such as district 1, district 2 and so on, it is recommended to use the suffix 1, 2, 3, 4, etc. rather than the roman numerals I, II, III, IV etc.

- When different units have an identical name (this happens very often in big countries and at the lower-level units), make sure that you rename those units uniquely by (1) adding a different suffix to the name, or (2) add the name of the parent unit separated by a dash.

3.1.2.2 Numerical values

Numerical values must contain only digits. No alphabetical character in the value. If you want to separate the thousands, please use the built-in number formatting tools in Excel.

3.1.2.3 Text values

Text values are often data dimension/characteristic and rarely data values as such. In all cases some precautions are to be taken.

- Most of the above rules for the geographical unit names apply to other data characteristics.
- Same characteristic names may be referred to the same state, so there is no need to differentiate them. Rather they must be written the same (e.g., Urine filtration for diagnostic method should not be written differently)

3.1.2.4 Serialization

All the input worksheet contains a first column “SN” meant to serialize the rows. After you sort the dataset, you fill in the SN column with an incremental number from 1 to the number of rows in the dataset. However, if you have any serial number or unique identifier for the data row that you would like to keep, you may store it in the SN column.

3.1.3 Coded data values

Some values must be coded in a specific way to be interpreted by the analysis tool.

3.1.3.1 Endemicities categories

The endemicity categories values are coded as presented in the table below. This codification is required when preparing the district data worksheet (IU_Data).

Table 18: Coded values of endemicity categories in the JRSM dataset

Numerical code	Description in JRSM	Coded description in the analysis tool
0	Non-endemic	Not endemic
1	Low prevalence (less than 10%)	Low
2	Moderate prevalence (10%-49%)	Moderate
3	High prevalence (50% and above)	High
4	Status unknown	Unknown

3.1.3.2 Subdistrict urbanity categories

There are three values of the urbanity level of a subdistrict: Urban, Peri-urban, and Rural.

3.1.3.3 Survey type

There are two values of the survey types: Baseline, and Impact. However, there is a third value "Baseline or Impact?" used by the tool if the survey cannot be classified due to lack of data.

3.1.3.4 Disease type

There are three values of the disease types: Urogenital, Intestinal, and Urogenital/Intestinal (or Combined species, Mixed).

3.1.3.5 Diagnostic methods

The names of the diagnostic methods and types must be written as presented in the table below. The disease type in the worksheet is the column "Species". The term type of disease may be more appropriate since the qualitative tests do not detect the species.

Table 19: Coded values of diagnostic methods and types

Diagnostic type	Diagnostic method	Disease Type
Parasitological	UF/KK	Urogenital/Intestinal
Parasitological	Urine Filtration	Urogenital
Parasitological	Urine Sedimentation	Urogenital
Parasitological	Kato-Katz	Intestinal
Clinical and qualitative	BIU	Urogenital
Clinical and qualitative	Dipstick	Urogenital
Serological	CCA	Intestinal

3.1.3.6 Disease methods type

There are three values of the diagnostic method types: Parasitology, Serology, and Clinical. And eventually Unknown where the diagnostic method is unknown.

3.1.4 Dealing with missing or unavailable data

Not all the data columns are used during the calculations. The mandatory columns are described below.

- Geographical data
  The columns representing the 3 levels (admin 1, admin 2 and admin 3) are mandatory in all the four input datasets. If any of them is missing, in the demographic data, the calculations will not be performed for the entire row, and if any of them is missing in the other datasets, the data in those rows will not be considered in the calculation.

- The demographic data are also important to calculate the estimations of people requiring PC. But they are not mandatory for the prevalence calculation.

- In the epidemiological dataset, in addition to the geographical data, the following data columns are mandatory: Survey type, Examined, Positive, Prevalence, Diagnostic methods and Year. If all of them are missing, the row will be ignored. But if some of them are missing,

the quality of the result will be affected. The consequence will be that a data row which primarily is of a good quality may be downgraded (because of a missing column) in the profit of another data row of a low quality. It is very important to provide all the information required for the data that you most trust to be of good quality.

3.1.5 Built-in data cleaning and preparation tools

The workbook provides some automated tools to use during the data preparation process. Some of them can be accessed directly by the user while some others are run silently during other operations.

3.1.5.1 Spelling check

The spelling checks is a handy tool **Spelling check** that helps to ensure that all administrative unit names are written correctly throughout the input worksheets. It is done in both epi and demo datasets.
The table below shows worksheets and the administrative units they contain.

Worksheet	Province (admin 1)	IU (admin 2)	Community (sub-district)
IU_Data	✓	✓	
demo_data	✓	✓	✓
Epi_data	✓	✓	✓

- For the Province and the IU, the worksheet IU_Data is in the reference, and they are checked in the 2 other worksheets to see if they are spelt correctly.

- For the Community (admin 3 or sub-district), the worksheet demo_data is the reference. Their names are checked in the epidemiological dataset.

The spelling check yields the following results:

Results	Description
Good	The name of the administrative unit (province or district) is correct compared to the reference
Found	The community in the epidemiological data is found in the demographic data within the same province and district
Not found	The community in the epidemiological data does not exist in the demographic data within the same province and district.
Missing	The epidemiological data does not have any information in the community column

3.1.5.2 Assigning codes to the communities (sub-districts)

The application provides the possibility of assigning codes automatically to the communities. This should be done after the spelling checks and that all communities are linked with their parent IU. This task is available on the worksheet “demo_data”

Generate and assign codes to communities.

It generates the codes for the communities and assigns them in the demographic and epidemiological datasets.

3.1.5.3 Classification of the surveys

The classification of the survey is an important step in data preparation. The application provides a tool to perform this task. On the worksheet "epi_data" there is a button Classify surveys for this. The classification produces three results:

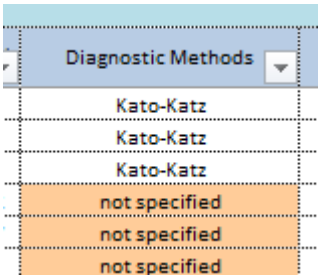
Classification value	Description
Baseline	The survey is a baseline survey
Impact	The survey is an impact assessment survey
Baseline or Impact?	The available information is insufficient to distinguish the survey

The data item used to classify surveys are:

- The year of the survey
- The first year of PC
- The latest year of PC
- The number of PC rounds received.

The correctness of the survey classification depends on the quality of those data items. The classification should be interactively crosschecked.

3.1.5.4 Checking the quality of the epidemiological data



This procedure is run in the worksheet "epi_data". It classifies the epidemiological datasets into 3 categories. It also helps to identify the diagnostic methods that might be misspelled. The unrecognized diagnostic methods are painted in brown

3.1.5.5 Cleaning units name

This is a silent procedure during the initialization of the worksheets. It consists of removing all blank spaces at the beginning or at the end of the administrative unit names.

3.1.5.6 Harmonizing the formatting of the administrative unit names

This is a silent procedure during the initialization of the worksheets. It consists of re-writing the administrative unit names in the same format. The user has the option to select in the instruction's worksheet the type of formatting. Three options are available:

Option	Description
1. First letter of each word in uppercase	The first letter of each word in the names is changed into uppercase
2. All in uppercase	The entire names are changed to uppercase

Option	Description
3. No change	Keep the names as they are

3.1.5.7 Customizing the administrative unit generic names (column titles)

This is also a silent procedure during the initialization of the worksheets. It consists of changing the titles of the administrative unit columns. Also in this case, the user has the option to provide the generic names of the administrative units. The picture below illustrates an example.

44	Use the local name of administrative units:	**Yes**
45	Harmonize the names of administrative units:	**3. No change**
46	Name of Admin 1:	**Province**
47	Name of Admin 2:	**District**
48	Name of Admin 3:	**Ward**

In the example above, the column titles of Admin 1, Admin 2 and subdistrict will be respectively Province, District and Ward.

Please, note that to enable this, the option

Use the local name of administrative units:	**Yes**

must be set to Yes.

3.1.5.8 Verifying and assigning the IU ID in the input worksheets

This is another silent procedure during the initialization of the worksheets. It consists of verifying that all IUs in the demographic and epidemiological datasets have the same IU ID as in the IU data worksheet. This supposes that the IU IDs are provided correctly in the IU data from ESPEN IU database.

3.1.5.9 Recalculating the prevalence values

This is another silent procedure during the initialization of the worksheets. It consists of recalculating the prevalence values in the epidemiological dataset. This is done only for row where the number of examined and the number of positive are provided. The purpose is to make sure that all prevalence values are in percentage. It has happened that in some dataset the prevalence values are calculated as a ratio.

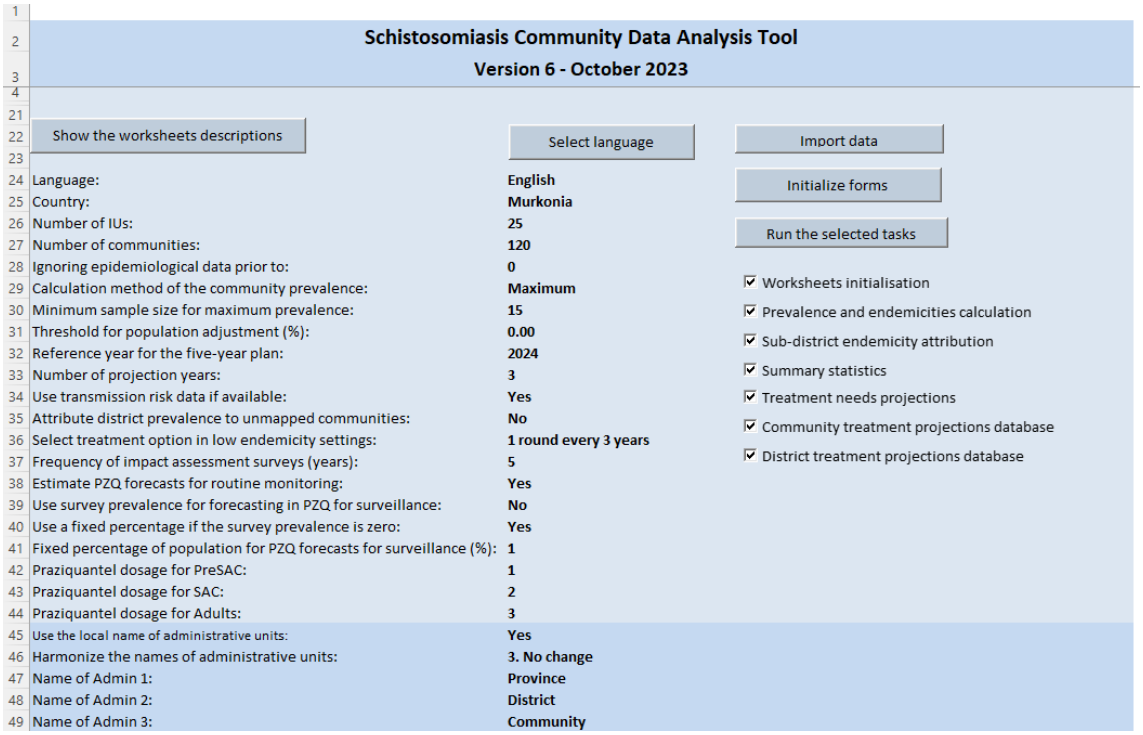
3.2 Calculations

Once the input data worksheets are prepared (structured and coded as required), the calculations can be performed. The calculations are subdivided into four steps: (1) the Initialization, (2) the calculation of prevalence, endemicity, treatment strategy, and the population requiring PC, (3) calculation of treatment needs projections, and (4) the building of treatment projections databases.

Before the calculation starts, there are some settings the user is required to do. It consists of choosing the language and setting calculation parameters values.

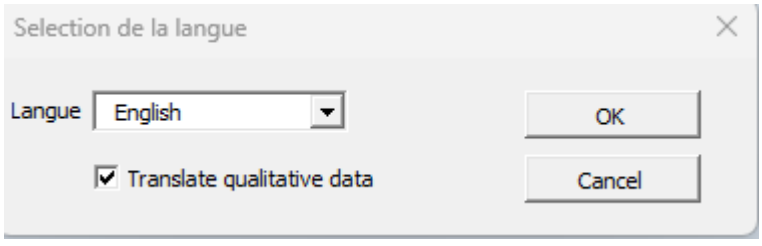
3.2.1 Configurations

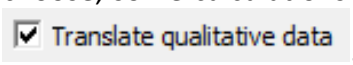
The application provides 2 categories of configurations: user interface and preference and calculations parameters. They are done in the worksheet “Instructions”. The figure below illustrates the work environment configuration page as well as the calculation options.



3.2.1.1 User Language

The user interface configuration is mainly the choice of the language. Two languages English and French are offered. To select the language, click the button Select language. A dialog box as shown below will open to allow the language selection.



Select the desired language and click Ok. You can also choose to translate the qualitative data. Please note that if the qualitative data are in another language than the one you choose, some calculations will produce unexpected results. Make sure that you check the 

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3.2.1.2 Customization of geographic unit column titles

- Select Yes or No in the dropdown list whether you want to replace the default administrative unit columns titles.

- Select Yes or No in the dropdown list whether you want to change the writing style of the units' names.

- Provide the administrative unit columns titles to be used to replace the default titles.

3.2.1.3 Calculation parameters

The table below illustrates the calculation parameters.

Table 20: List of calculation parameters

Parameter	Example of values	Default values
Country:	**Murkonia**	
Number of IUs:	**4**	
Number of communities:	**120**	
Ignoring epidemiological data prior to:	**2000**	**0**
Calculation method of the community prevalence:	**Maximum**	**Maximum**
Minimum sample size for maximum prevalence:	**15**	**15**
Threshold for population adjustment (%):	**0.00**	**0.00**
Reference year for the five-year plan:	**2024**	**2024**
Number of projection years:	**5**	**5**
Use transmission risk data if available:	**Yes**	**Yes**
Attribute district prevalence to unmapped communities:	**No**	**No**
Select treatment option in low endemicity settings:	**1 round every 3 years**	**Test and Treat**
Frequency of impact assessment surveys (rounds):	**5**	**5**
Estimate PZQ forecasts for routine monitoring:	**Yes**	**Yes**
Use survey prevalence for forecasting in PZQ for surveillance:	**No**	**No**

Parameter	Example of values	Default values
Use a fixed percentage if the survey prevalence is zero:	**Yes**	**Yes**
Fixed percentage of population for PZQ forecasts for surveillance (%):	**1**	**1**
Praziquantel dosage for PreSAC:	**1**	**1**
Praziquantel dosage for SAC:	**2**	**2**
Praziquantel dosage for adults:	**3**	**3**

3.2.2 Calculation proceedings

Once the settings are done, the calculations can start. The table below illustrates the tasks and their execution mode. The silent mode or batch process indicates that the task is run from another task without user interaction. In opposite the interactive mode means that the user interactively launches the tasks from the user interface by clicking a button.

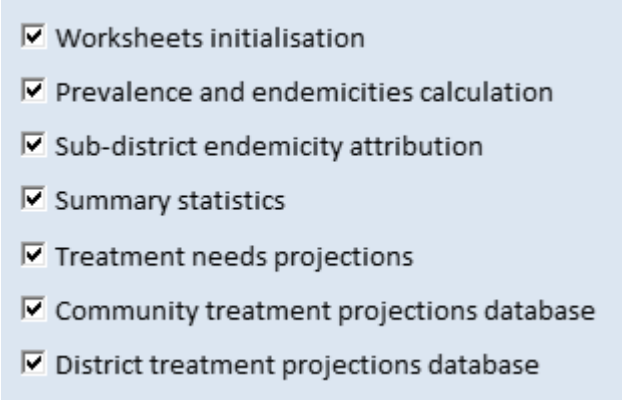
Table 21: Calculation steps and execution mode

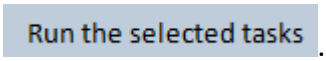
Steps	Operations	Worksheet	Silent mode	Interactive mode
Initialization	Verify and Assign IU ID	Demo_data Epi_data	Yes	Yes
	Harmonize geographic units name formatting	IU_data Demo_data Epi_data	Yes	Yes
	Clear all existing calculation data on the output worksheets	All applicable worksheets	Yes	Yes
	Verify gap between IU and sub-districts population values and adjust if necessary	Demo_data	Yes	Yes
	Recalculate survey prevalence values	Epi_data	Yes	Yes
Prevalence and Endemicity calculations	District baseline and impact prevalence and endemicity calculation	Details	Yes	Yes
	Community baseline and impact prevalence and endemicity calculation	Details	Yes	Yes
	Community treatment strategy calculation	Details	Yes	Yes
	Calculation of population requiring PC	Summary	Yes	Yes
Projections Calculations	Community level	C_Projections	Yes	Yes
		C_Projections	Yes	Yes
	District level	D_Projections	Yes	Yes
Projections Databases	Community level	Community_DB	Yes	Yes
	District level	District_DB	Yes	Yes
Filling drug Request	Filling in drug request from with community analysis results	D_Projections	No	Yes

3.2.2.1 Silent mode

To run the calculations in silent mode, do the followings:
On the instructions worksheet:

- Check all the tasks as shown below.



- Click the button 

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Please note that the last two tasks are time consuming for a high number of sub-units and it is recommended to uncheck them and run them in interactive mode.

The application will run without any disruption (unless an error is encountered) all the calculations. During this process you will not be able to do other work within the application. Note also that this process may take some time according to the number of sub-districts.

3.2.2.2 Interactive mode

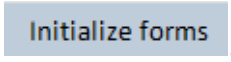
This mode allows you to run the tasks step by step. Its advantage is that you can review the results at the end of each task before proceeding to the next task. You may also stop at any time and resume later.

3.2.2.3 Calculations steps

3.2.2.3.1 Initialization

The initialization is the very first task that consists of:

- Data cleaning and verification
- Formatting of input worksheets
- Cleaning and formatting of output worksheets
- Adjusting sub-district populations to IU populations

To execute this task, click the Instructions worksheet and click the button 

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3.2.2.3.2 Prevalence, endemicity and treatment strategy calculations

In the worksheet Details, you can calculate the prevalence, endemicity category and treatment strategy for the sub-districts using the sub district epidemiological data.

This task can be run from the worksheet Details. It consists of 3 sub-tasks.

- Calculation at district level.

Click the button **Calculate District Prevalence and Endemicity**.

- Calculation at subdistrict level.

  Click the button **Calculate Community Prevalence and Endemicity**.

  Click the button **Final Endemicity and Treatment Strategy**.

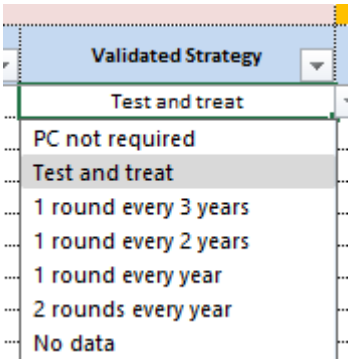
3.2.2.3.3 Validation of treatment strategy and calculation of population requiring PC

- Validation of treatment strategy

The calculation of population requiring PC are based on the treatment strategy calculated in the worksheet Details which are reported here in the columns I, J, K and L as illustrated below.

I	J	K	L
9	10	11	12
Community Endemicity and Treatment Strategy			
Endemicity	**Code**	**Calculated Strategy**	**Validated Strategy**
Not endemic (impact)	99	Test and treat	Test and treat
Not endemic (impact)	99	Test and treat	Test and treat
Not endemic (impact)	0	PC not required	PC not required
Not endemic (impact)	99	Test and treat	Test and treat
Moderate (impact)	21	1 round every year	1 round every year

In column L titled Validated Strategy, the calculated strategy is reported. This column serves to define the validated strategy which will be the final strategy to use to estimate population. Validation is an interactive human-based task which consists of revising treatment strategy for some specific sub-units that have some patterns.



To revise the treatment strategy of a sub-unit, click the dropdown list as shown on the left and select the strategy you would like to attribute to the unit. Any change of strategy must be supported by facts. The user can add explanatory notes to the cell to inform about the facts that support the modification of the strategy.

- Calculation of the population requiring PC

The population requiring PC is calculated with the validated treatment strategy.
To complete this task:

Click the button **Calculate Population Requiring PC**

3.2.2.3.4 Summary statistics

Key indicators are summarized in the worksheets Stats.

To generate the summaries, select the worksheet Stats and click the button **STATS**.

3.2.2.3.5 Projections of treatment needs

Treatment needs are projected over 5 years.

- To generate the treatment projections of the sub-units, select the worksheet C_Projections and click the button **Generate Community Projections**.

- To generate the treatment projections of the districts, select the worksheet D_Projections and click the button **Generate IU Projections**.

3.2.2.3.6 Projections databases

The projections data can be formatted and stored in database format.

- To build the treatment projections database of the sub-units, select the worksheet Community_DB and click the button **Generate Community Projections Database**.

- To build the treatment projections database of the districts, select the worksheet District_DB and click the button **Generate IU Projections Database**.

3.3 Reviewing output results

3.3.1 Details worksheet

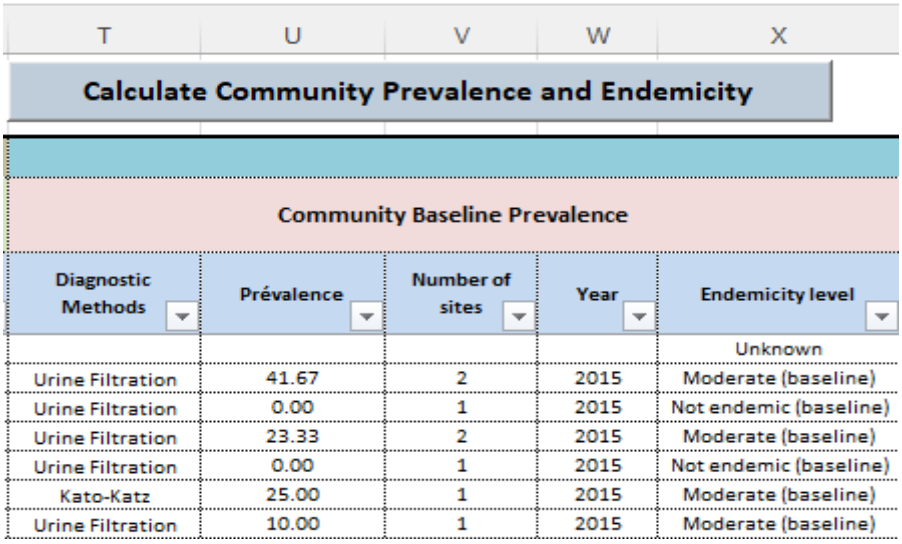
The details worksheet contains the outputs of the calculation of prevalence and treatment strategy.

3.3.1.1 Prevalence results

Those results include the diagnostic method, the prevalence value, the number of data points, the year and the endemicity category. They are subdivided into baseline and impact assessment.

The figure below shows the prevalence results of baseline surveys of the subdistricts.

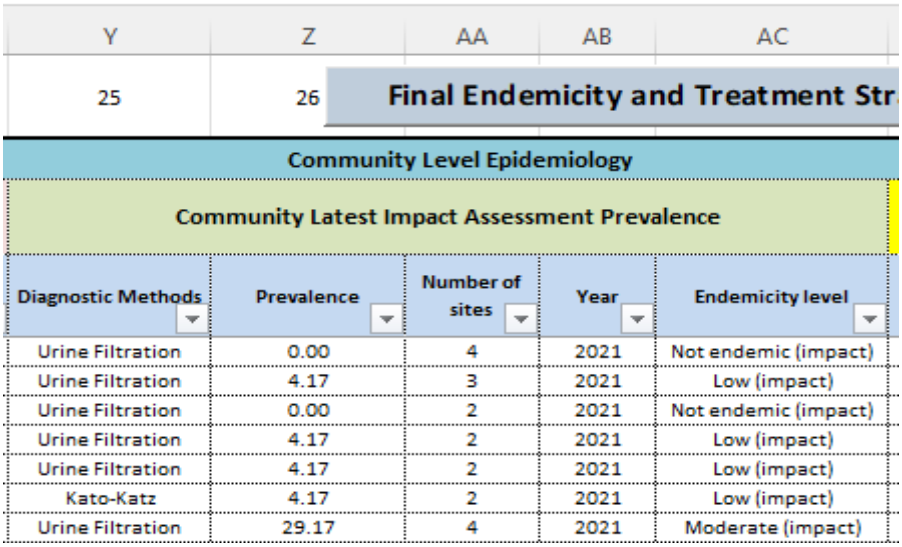
Figure 1: prevalence results of baseline surveys of the subdistricts.



T	U	V	W	X
	Calculate Community Prevalence and Endemicity			
	Community Baseline Prevalence			
Diagnostic Methods	**Prévalence**	**Number of sites**	**Year**	**Endemicity level**
				Unknown
Urine Filtration	41.67	2	2015	Moderate (baseline)
Urine Filtration	0.00	1	2015	Not endemic (baseline)
Urine Filtration	23.33	2	2015	Moderate (baseline)
Urine Filtration	0.00	1	2015	Not endemic (baseline)
Kato-Katz	25.00	1	2015	Moderate (baseline)
Urine Filtration	10.00	1	2015	Moderate (baseline)

The figure below shows the prevalence results of impact assessment surveys of the subdistricts.

Figure 2: prevalence results of impact assessment surveys of the subdistricts



Y	Z	AA	AB	AC
25	26	**Final Endemicity and Treatment Str**		
		Community Level Epidemiology		
		Community Latest Impact Assessment Prevalence		
Diagnostic Methods	**Prevalence**	**Number of sites**	**Year**	**Endemicity level**
Urine Filtration	0.00	4	2021	Not endemic (impact)
Urine Filtration	4.17	3	2021	Low (impact)
Urine Filtration	0.00	2	2021	Not endemic (impact)
Urine Filtration	4.17	2	2021	Low (impact)
Urine Filtration	4.17	2	2021	Low (impact)
Kato-Katz	4.17	2	2021	Low (impact)
Urine Filtration	29.17	4	2021	Moderate (impact)

3.3.1.2 Treatment strategy results

The treatment strategy results include the final endemicity category of the subdistrict, its sources (baseline survey, impact survey or schistosomiasis risk transmission), the JRSM code and the corresponding treatment strategy.

The figure below shows the results of treatment strategies of the subdistricts.

Figure 3: Results of treatment strategies of the subdistricts

AD	AE	AF	AG
ategy	31	32	33
	Community Final Endemicity and Treatment Strategy		
Endemicity	**Source**	**Code**	**Treatment Strategy**
Not endemic (impact)	Community Impact	99	Test and treat
Low (impact)	Community Impact	11	1 round every 2 years
Not endemic (impact)	Community Baseline	0	PC not required
Low (impact)	Community Impact	11	1 round every 2 years
Low (impact)	Community Impact	11	Test and treat
Low (impact)	Community Impact	11	1 round every 2 years
Moderate (impact)	Community Impact	21	1 round every year

3.3.1.3 Mapping and impact assessment survey status

This section provides 3 other indicators on PC history, the need of baseline mapping or impact assessment.

AH	AI	AJ
34	35	36
	Program History	
Mapping due (0=No, 1=Y	**Impact assessment due (0=No, 1=Ye**	**PC History**
0	0	PC for less than 5 years
0	0	PC for less than 5 years
0	1	PC for 5-9 years
0	1	PC for 5-9 years
0	1	PC for 5-9 years
0	1	PC for 5-9 years

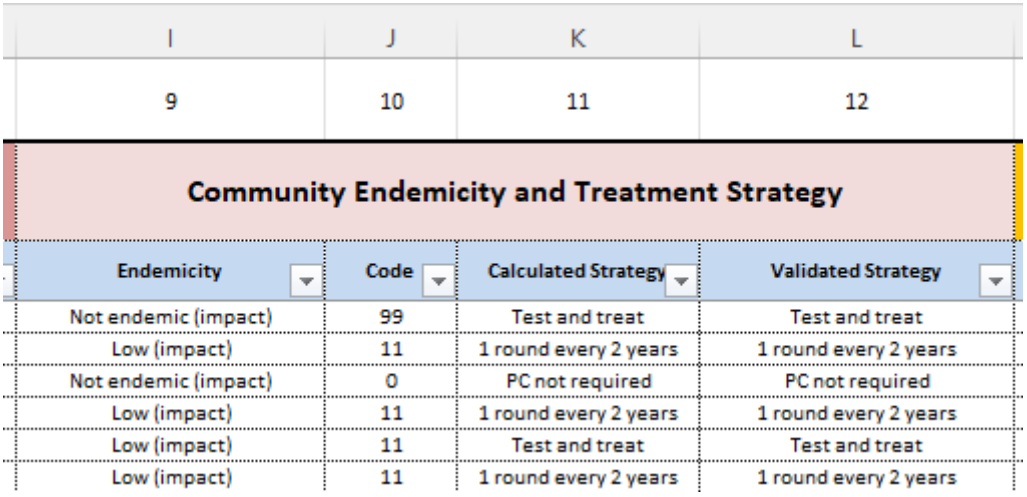
3.3.2 Summary worksheet

The Summary worksheet contains the output results of the validated treatment strategy and the population requiring PC for the different age groups within the subdistricts.

3.3.2.1 Validated treatment strategy

The validated treatment strategy is by default the treatment strategy calculated from all epidemiological data provided. It is in column L and is the same in column K.

Figure 4: Validated treatment strategy of the subdistricts

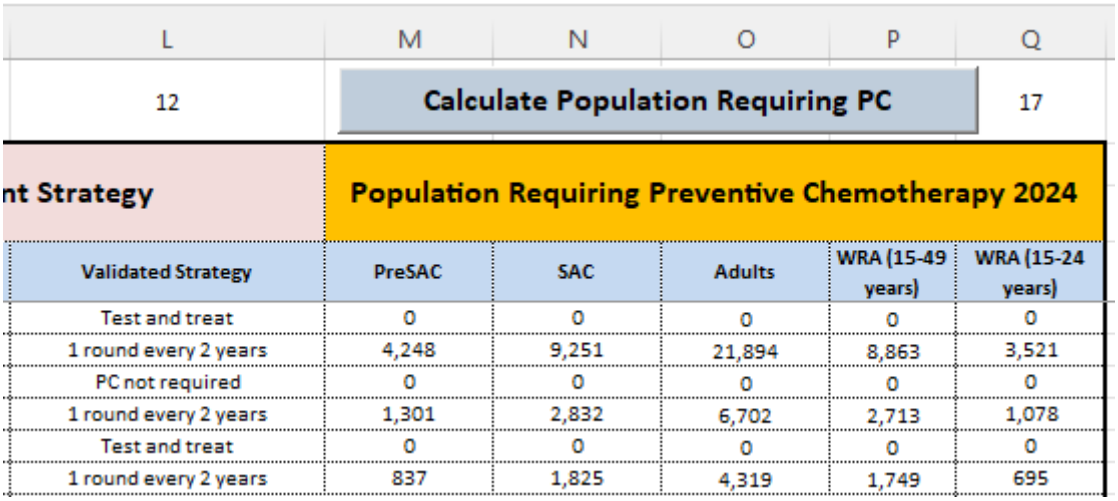


I	J	K	L
9	10	11	12
	Community Endemicity and Treatment Strategy		
Endemicity	**Code**	**Calculated Strategy**	**Validated Strategy**
Not endemic (impact)	99	Test and treat	Test and treat
Low (impact)	11	1 round every 2 years	1 round every 2 years
Not endemic (impact)	0	PC not required	PC not required
Low (impact)	11	1 round every 2 years	1 round every 2 years
Low (impact)	11	Test and treat	Test and treat
Low (impact)	11	1 round every 2 years	1 round every 2 years

3.3.2.2 Population requiring PC

The population requiring PC are calculated by age groups.

Figure 5: Population requiring PC



L	M	N	O	P	Q
12	**Calculate Population Requiring PC**				17
nt Strategy	**Population Requiring Preventive Chemotherapy 2024**				
Validated Strategy	**PreSAC**	**SAC**	**Adults**	**WRA (15-49 years)**	**WRA (15-24 years)**
Test and treat	0	0	0	0	0
1 round every 2 years	4,248	9,251	21,894	8,863	3,521
PC not required	0	0	0	0	0
1 round every 2 years	1,301	2,832	6,702	2,713	1,078
Test and treat	0	0	0	0	0
1 round every 2 years	837	1,825	4,319	1,749	695

3.3.3 Worksheet C_Prevalence

The worksheet C_Prevalence contains all the prevalence values calculated for the subdistricts.

Figure 6: Prevalence values of subdistricts

		Epidemiology						
Community	Community ID	Diagnostic Methods	Examined	Positi	Prevalence (%)	Number of sites	Year of survey	Survey type
Community 118	MRK-00025-003	Kato-Katz	60	30	50	7	2015	Baseline
Community 119	MRK-00025-004	Kato-Katz	60	20	33.33333333	5	2015	Baseline
Community 120	MRK-00025-005	Kato-Katz	60	3	5	4	2015	Baseline
Community 002	MRK-00001-002	Kato-Katz	24	0	0	3	2021	Impact
Community 004	MRK-00001-004	Kato-Katz	24	0	0	2	2021	Impact
Community 006	MRK-00002-002	Kato-Katz	24	1	4.166666667	2	2021	Impact
Community 007	MRK-00002-003	Kato-Katz	24	0	0	4	2021	Impact

3.3.4 Worksheet STATS

This worksheet contains summarized results at district, region, or national level.

Figure 7: Population Projections

Population groups	2024	2025	2026	2027	2028
Total population	3,790,098	3,884,856	3,981,975	4,081,526	4,183,563
PreSAC Population	440,782	451,813	463,100	474,681	486,545
SAC Population	960,030	984,027	1,008,631	1,033,845	1,059,692
Adult Population	2,272,158	2,328,965	2,387,187	2,446,873	2,508,043
WRA Population (15-49 years)	919,856	942,857	966,423	990,583	1,015,344
WRA Population (15-24 years)	365,368	374,497	383,869	393,464	403,299

Figure 8: Treatment Needs Projections for Preventive Chemotherapy

Indicators	2024	2025	2026	2027	2028	Total PZQ
PreSAC						
People requiring PC	334,285	342,642	351,208	359,989	368,988	
People to be treated	334,285	208,304	283,373	288,383	297,718	
PZQ estimations	335,215	209,259	284,350	289,385	298,743	1,416,952
SAC						
People requiring PC	728,078	746,280	764,941	784,055	803,658	
People to be treated	728,078	453,694	617,197	628,095	648,435	
PZQ estimations	1,460,207	911,540	1,238,650	1,260,552	1,301,341	6,172,290
Adults						
People requiring PC	1,723,184	1,766,267	1,810,419	1,855,682	1,902,072	
People to be treated	1,723,184	1,073,799	1,460,751	1,486,569	1,534,700	
PZQ estimations	5,183,935	3,236,138	4,397,364	4,475,194	4,619,978	21,912,609
WRA (15-49 ans)						
People requiring PC	697,612	715,055	732,927	751,252	770,034	
People to be treated	697,612	434,715	591,367	601,821	621,306	
PZQ estimations	2,098,660	1,310,113	1,780,219	1,811,731	1,870,345	8,871,068
WRA (15-24 ans)						
People requiring PC	277,089	284,013	291,113	298,392	305,858	
People to be treated	277,089	172,665	234,885	239,039	246,781	
PZQ estimations	833,579	520,365	707,084	719,606	742,896	3,523,530

Figure 9: Mapping and Impact Assessment Gaps

Province	Total number of communities	Number of communities with baseline prevalence	Number of communities without baseline prevalence	Number of communities without baseline prevalence but with data on transmission risk	Number of communities without baseline prevalence and without data on the risk of transmission	Number of communities without baseline prevalence but having had an impact assessment	Number of communities due for mapping	Number of communities due for Impact assessment
South	24	21	3	0	3	3	0	0
West	21	19	2	0	2	2	0	0
North	35	28	7	5	2	2	0	5
East	40	35	5	0	5	3	2	14
Total	**120**	**103**	**17**	**5**	**12**	**10**	**2**	**19**

3.3.5 Worksheet C_Projections

The worksheet C_Projections contains the annual treatment plan, the estimated population to be treated by age group for the projection years.

3.3.5.1 Treatment plan

The figure below shows in columns K et O the treatment plan projection (2024 to 2028) for the subdistricts.

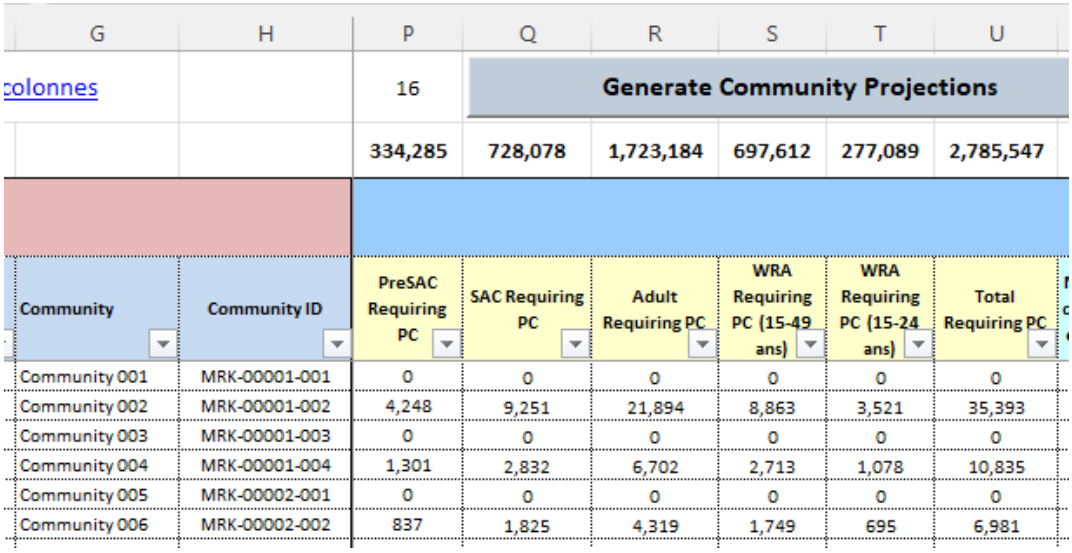
Figure 10: Treatment plan projection for the subdistricts

G	H	I	J	K	L	M	N	O
:olonnes		9	10	Generate Treatment Plan				
				88	54	78	64	78
		Endemicity and tretment Strategy		Treatment Plan Projection				
Community	Community ID	Endemicity	Treatment Strategy	2024	2025	2026	2027	2028
Community 001	MRK-00001-001	Not endemic (impact)	Test and treat	0	0	0	0	0
Community 002	MRK-00001-002	Low (impact)	1 round every 2 years	1	0	1	0	1
Community 003	MRK-00001-003	Not endemic (impact)	PC not required	0	0	0	0	0
Community 004	MRK-00001-004	Low (impact)	1 round every 2 years	1	0	1	0	1
Community 005	MRK-00002-001	Low (impact)	Test and treat	0	0	0	0	0
Community 006	MRK-00002-002	Low (impact)	1 round every 2 years	1	0	1	0	1
Community 007	MRK-00002-003	Moderate (impact)	1 round every year	1	1	1	1	1

3.3.5.2 Population requiring PC

The population requiring PC is the total population of the subdistrict if PC is required.

Figure 11: Population requiring PC



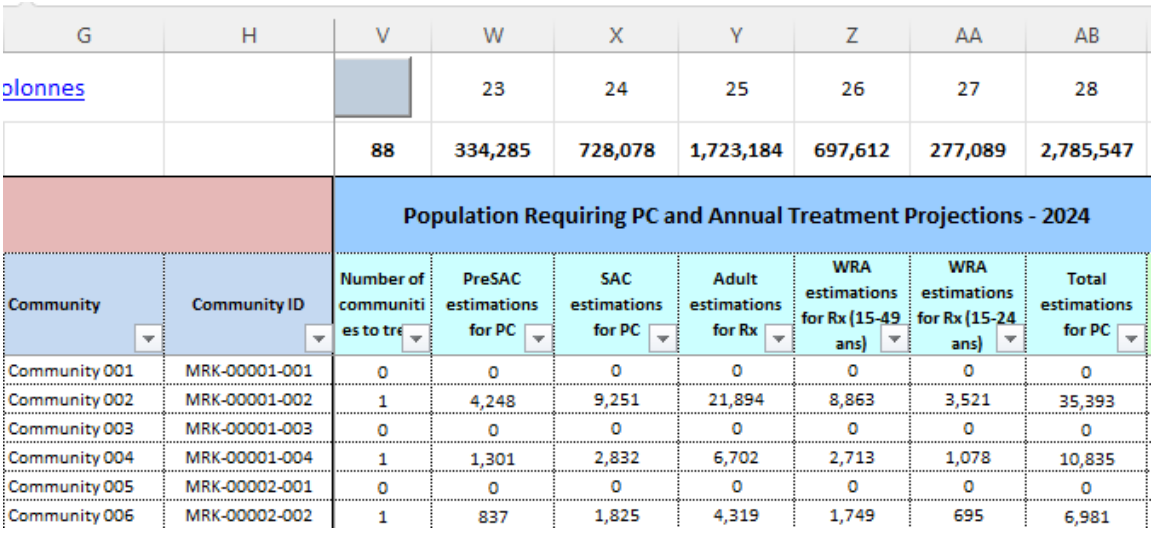
G	H	P	Q	R	S	T	U
colonnes		16	Generate Community Projections				
		334,285	728,078	1,723,184	697,612	277,089	2,785,547

Community	Community ID	PreSAC Requiring PC	SAC Requiring PC	Adult Requiring PC	WRA Requiring PC (15-49 ans)	WRA Requiring PC (15-24 ans)	Total Requiring PC
Community 001	MRK-00001-001	0	0	0	0	0	0
Community 002	MRK-00001-002	4,248	9,251	21,894	8,863	3,521	35,393
Community 003	MRK-00001-003	0	0	0	0	0	0
Community 004	MRK-00001-004	1,301	2,832	6,702	2,713	1,078	10,835
Community 005	MRK-00002-001	0	0	0	0	0	0
Community 006	MRK-00002-002	837	1,825	4,319	1,749	695	6,981

3.3.5.3 Estimated population to be treated

The population to be treated is the total population requiring PC if PC is planned.

Figure 12: Estimated population to be treated



G	H	V	W	X	Y	Z	AA	AB
olonnes			23	24	25	26	27	28
		88	334,285	728,078	1,723,184	697,612	277,089	2,785,547

Community	Community ID	Population Requiring PC and Annual Treatment Projections - 2024						
		Number of communities to tre	PreSAC estimations for PC	SAC estimations for PC	Adult estimations for Rx	WRA estimations for Rx (15-49 ans)	WRA estimations for Rx (15-24 ans)	Total estimations for PC
Community 001	MRK-00001-001	0	0	0	0	0	0	0
Community 002	MRK-00001-002	1	4,248	9,251	21,894	8,863	3,521	35,393
Community 003	MRK-00001-003	0	0	0	0	0	0	0
Community 004	MRK-00001-004	1	1,301	2,832	6,702	2,713	1,078	10,835
Community 005	MRK-00002-001	0	0	0	0	0	0	0
Community 006	MRK-00002-002	1	837	1,825	4,319	1,749	695	6,981

3.3.5.4 PZQ estimations

Figure 13: PZQ estimations

G	H	AC	AD	AE	AF	AG	AH
olonnes		29	30				
		335,215	1,460,207	5,183,935	2,098,660	833,579	6,644,142
Community	Community ID	PZQ for PreSAC (150 mg	PZQ for SAC (600 mg)	PZQ for Adults (600 mg)	PZQ for WRA (15-49 ans) (600 mg)	PZQ for WRA (15-24 ans) (600 mg)	PZQ Total (SAC + Adults) (600 mg)
Community 001	MRK-00001-001	124	542	1,925	779	310	2,467
Community 002	MRK-00001-002	4,248	18,502	65,682	26,589	10,563	84,184
Community 003	MRK-00001-003	0	0	0	0	0	0
Community 004	MRK-00001-004	1,301	5,664	20,106	8,139	3,234	25,770
Community 005	MRK-00002-001	2	7	24	10	4	31
Community 006	MRK-00002-002	837	3,650	12,957	5,247	2,085	16,607

3.3.6 Worksheet D_Projections

The worksheet D_Projections contains the same results as the C_Projections but aggregated at district level.

3.3.7 The database outputs

The projections results are presented in database formats in the worksheets Community_DB, and District_DB.

3.4 Filling drug request

The sub-district data analysis tool generates all the data that is useful for filling the medicines request. Though the analysis is done at the sub-district level, the summary data are aggregated at the Implementation Unit (IU) level, and it is this summary data that is used to complete the drug application. The main indicators required in the filling of JAP forms and generated by the analysis are:

1. The district's endemicity category
2. The number of people requiring PC by subgroup (PreSAC, SAC, adults)
3. The total population requiring PC
4. The treatment plans
5. The number of people to be treated by subgroup (PreSAC, SAC, adults)
6. The total number of people to be treated

These indicators are generated in the worksheet "D_PROJECTIONS" and will be transferred to different sheets of the JRSM form.
Filling can be done either manually by copying and pasting or automatically through the feature provided for this purpose.

The filing will concern the worksheets COUNTRY_INFO and PZQ.

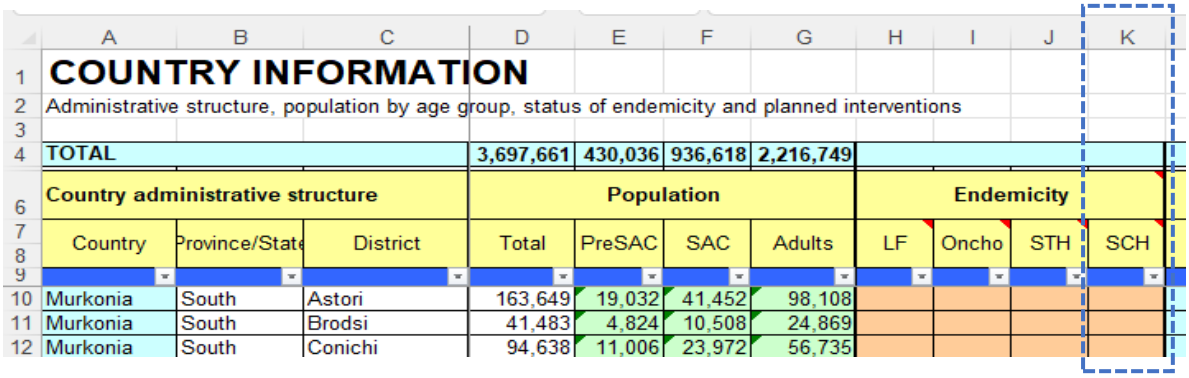
3.4.1 "COUNTRY_INFO" worksheet

3.4.1.1 The endemicity of the district

The tool provides endemicity data for each IU in the “IU_Data” worksheet in column K and in the "D_PROJECTIONS” worksheet in column G. This new category of endemicity is calculated as the highest endemicity among all sub-units within the IU. On the figure below, the final endemicity of the IU can be found in the G.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Cliquer pour consulter le dictionnaire pour la description des cod						7	Generate IU Projections				
2	IU Treatment Needs Projections							327,933	714,243	1,690,440	684,356	271,823
3	Administrative Units						EPI					
4	SN	Country	SO3 Code	Province	District	IU ID	Endemicity	PreSAC Requiring PC	SAC Requiring PC	Adult Requiring PC	WRA Requiring PC (15-49 an	WRA Requiring PC (15-24 an
5	1	Murkonia	MRK	South	Astori	1	99	0	0	0	0	0
6	2	Murkonia	MRK	South	Brodsi	2	21	993	2,164	5,121	2,074	824
7	3	Murkonia	MRK	South	Conichi	3	21	8,567	18,660	44,164	17,880	7,102

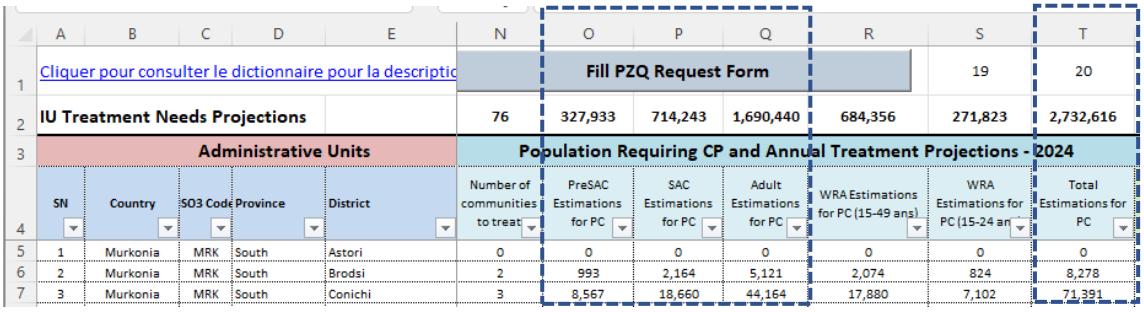
The endemicity will be transferred in column K of the "COUNTRY_INFO" worksheet in the JRSM.



	A	B	C	D	E	F	G	H	I	J	K
1	**COUNTRY INFORMATION**										
2	Administrative structure, population by age group, status of endemicity and planned interventions										
3											
4	**TOTAL**			**3,697,661**	**430,036**	**936,618**	**2,216,749**				
6	**Country administrative structure**			**Population**				**Endemicity**			
7	Country	Province/State	District	Total	PreSAC	SAC	Adults	LF	Oncho	STH	SCH
10	Murkonia	South	Astori	163,649	19,032	41,452	98,108				
11	Murkonia	South	Brodsi	41,483	4,824	10,508	24,869				
12	Murkonia	South	Conichi	94,638	11,006	23,972	56,735				

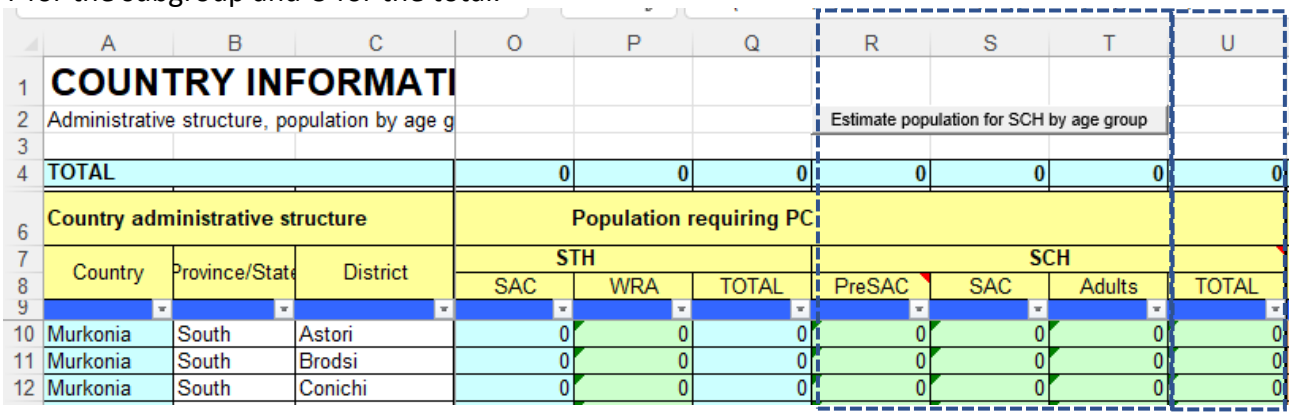
3.4.1.2 Population requiring PC to be treated

The population requiring PC to be treated for each IU is calculated as the sum of all populations requiring PC to be treated in sub-units. It is available in the "D_PROJECTIONS" worksheet for the years included in the projection. In the figure below, the populations requiring PC to be treated by subgroup are in columns O, P and Q for 2024 and the total is in column T.



	A	B	C	D	E	N	O	P	Q	R	S	T
1	Cliquer pour consulter le dictionnaire pour la descriptic						**Fill PZQ Request Form**				19	20
2	**IU Treatment Needs Projections**					76	327,933	714,243	1,690,440	684,356	271,823	2,732,616
3	**Administrative Units**					**Population Requiring CP and Annual Treatment Projections - 2024**						
4	SN	Country	SO3 Code	Province	District	Number of communities to treat	PreSAC Estimations for PC	SAC Estimations for PC	Adult Estimations for PC	WRA Estimations for PC (15-49 ans)	WRA Estimations for PC (15-24 an	Total Estimations for PC
5	1	Murkonia	MRK	South	Astori	0	0	0	0	0	0	0
6	2	Murkonia	MRK	South	Brodsi	2	993	2,164	5,121	2,074	824	8,278
7	3	Murkonia	MRK	South	Conichi	3	8,567	18,660	44,164	17,880	7,102	71,391

They will be transferred in "COUNTRY_INFO" in JRSM to the corresponding column R, S and T for the subgroup and U for the total.



	A	B	C	O	P	Q	R	S	T	U
1	**COUNTRY INFORMATI**									
2	Administrative structure, population by age g						Estimate population for SCH by age group			
3										
4	**TOTAL**			**0**	**0**	**0**	**0**	**0**	**0**	**0**
6	**Country administrative structure**			**Population requiring PC**						
7	Country	Province/State	District	**STH**			**SCH**			
8				SAC	WRA	TOTAL	PreSAC	SAC	Adults	TOTAL
10	Murkonia	South	Astori	0	0	0	0	0	0	0
11	Murkonia	South	Brodsi	0	0	0	0	0	0	0
12	Murkonia	South	Conichi	0	0	0	0	0	0	0

3.4.1.3 Treatment plan

The treatment plan is required in the JRSM in the "COUNTRY_INFO" worksheet in column Y. It indicates whether an endemic IU is planned to be treated or not according to its endemic category. As part of the sub-district analysis, this information is provided in the "D_PROJECTIONS" worksheet by the number sub-district to be treated. In the figure below, column N contains the number of communities to treat. Value 0 means that no sub-unit in the IU is planned for treatment, and a value from one an above will be means that treatment will take place.

	A	B	C	D	E	J	K	L	M	N	O
1	Cliquer pour consulter le dictionnaire pour la descriptio					te IU Projections			13		Fill PZ
2	IU Treatment Needs Projections					1,690,440	684,356	271,823	2,732,616	76	327,933
3	Administrative Units										Population Re
4	SN	Country	SO3 Code	Province	District	Adult Requiring PC	WRA Requiring PC (15-49 an	WRA Requiring PC (15-24 an	Total Requiring PC	Number of communities to treat	PreSAC Estimations for PC
5	1	Murkonia	MRK	South	Astori	0	0	0	0	0	0
6	2	Murkonia	MRK	South	Brodsi	5,121	2,074	824	8,278	2	993
7	3	Murkonia	MRK	South	Conichi	44,164	17,880	7,102	71,391	3	8,567

The treatment plan must be transferred to the corresponding section of the JRSM (column Y in COUNTRY_INFO).

	A	B	C	Q	R	S	T	U	V	W	X	Y	AA
1	COUNTRY INFORMATI												
2	Administrative structure, population by age g				Estimate population for SCH by age group				Validate		Undo		
3													
4	TOTAL			0	0	0	0	0					
6	Country administrative structure			equiring PC					Number of treatment rounds planned for the year				Epi p
7					SCH								
8	Country	Province/State	District	TOTAL	PreSAC	SAC	Adults	TOTAL	LF	Oncho	STH	SCH	LF
10	Murkonia	South	Astori	0	0	0	0	0					
11	Murkonia	South	Brodsi	0	0	0	0	0					
12	Murkonia	South	Conichi	0	0	0	0	0					

3.4.2 "PZQ" worksheet

3.4.2.1 Target population

The target population is the number of people to be treated according to the treatment plan. They are provided in the "D_PROJECTIONS" worksheet in columns O, P, and Q for the year 2024.

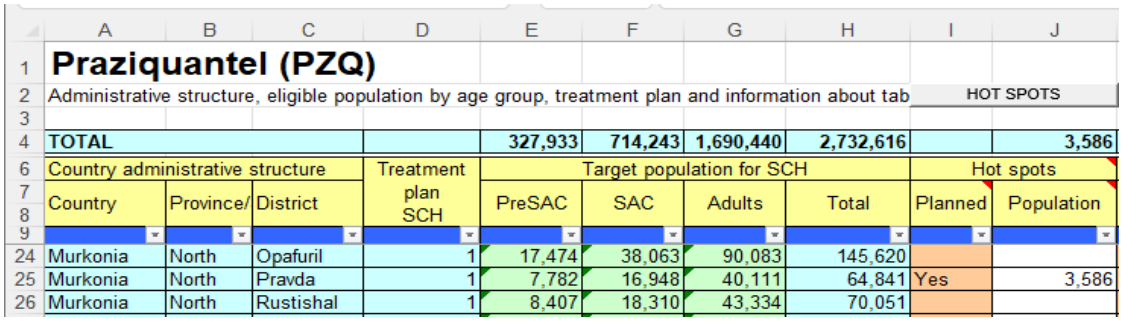
	A	B	C	D	E	N	O	P	Q	R	S	T
1	Cliquer pour consulter le dictionnaire pour la descriptio						Fill PZQ Request Form				19	20
2	IU Treatment Needs Projections					76	327,933	714,243	1,690,440	684,356	271,823	2,732,616
3	Administrative Units					Population Requiring CP and Annual Treatment Projections - 2024						
4	SN	Country	SO3 Code	Province	District	Number of communities to treat	PreSAC Estimations for PC	SAC Estimations for PC	Adult Estimations for PC	WRA Estimations for PC (15-49 ans)	WRA Estimations for PC (15-24 an	Total Estimations for PC
5	1	Murkonia	MRK	South	Astori	0	0	0	0	0	0	0
6	2	Murkonia	MRK	South	Brodsi	2	993	2,164	5,121	2,074	824	8,278
7	3	Murkonia	MRK	South	Conichi	3	8,567	18,660	44,164	17,880	7,102	71,391

They will be transferred to columns E, F, and G in the "PZQ" worksheet.

	A	B	C	D	E	F	G	H	I	J
1	Praziquantel (PZQ)									
2	Administrative structure, eligible population by age group, treatment plan and information about tab								HOT SPOTS	
3										
4	TOTAL				0	0	0	0		0
6	Country administrative structure			Treatment plan SCH	Target population for SCH				Hot spots	
7										
8	Country	Province/	District		PreSAC	SAC	Adults	Total	Planned	Population
10	Murkonia	South	Astori	0	0	0	0	0		
11	Murkonia	South	Brodsi	0	0	0	0	0		
12	Murkonia	South	Conichi	0	0	0	0	0		

3.4.2.2 Hot spots population

The hot spots population is calculated as the sum of people in sub-districts detected as hot spots (2 rounds of PC annually). It is transferred in the column J in the PZQ worksheet and the column I is filled with Yes.

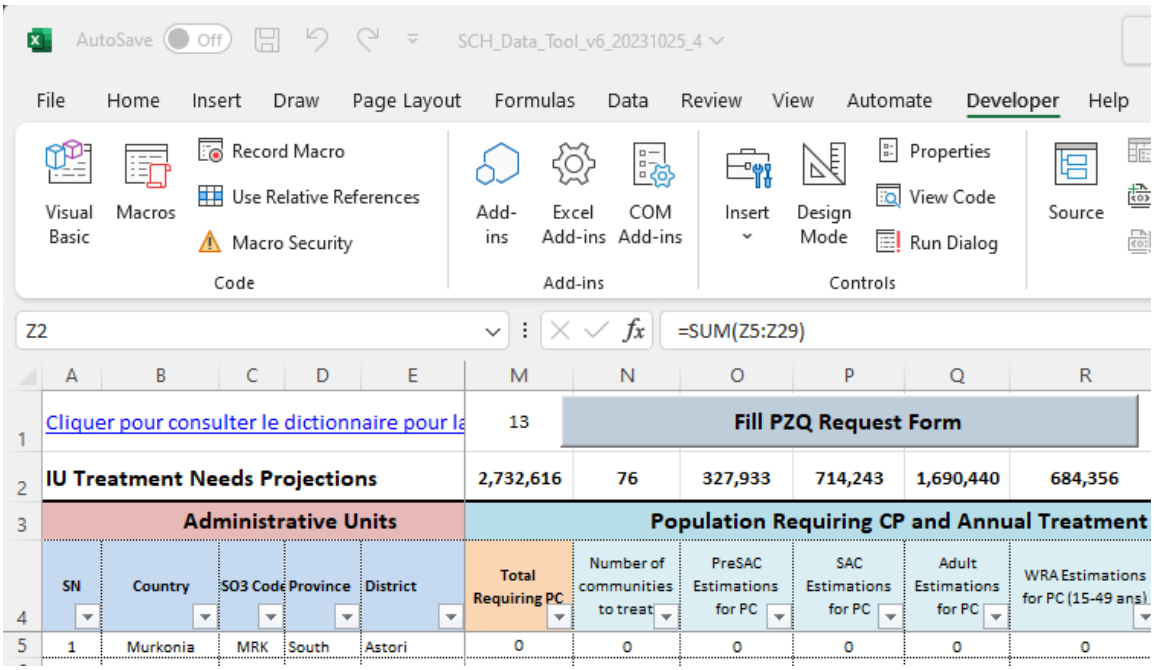


	A	B	C	D	E	F	G	H	I	J
1	**Praziquantel (PZQ)**									
2	Administrative structure, eligible population by age group, treatment plan and information about tab								HOT SPOTS	
3										
4	**TOTAL**				**327,933**	**714,243**	**1,690,440**	**2,732,616**		**3,586**
6	Country administrative structure			Treatment plan SCH	Target population for SCH				Hot spots	
7	Country	Province/	District		PreSAC	SAC	Adults	Total	Planned	Population
8										
9										
24	Murkonia	North	Opafuril	1	17,474	38,063	90,083	145,620		
25	Murkonia	North	Pravda	1	7,782	16,948	40,111	64,841	Yes	3,586
26	Murkonia	North	Rustishal	1	8,407	18,310	43,334	70,051		

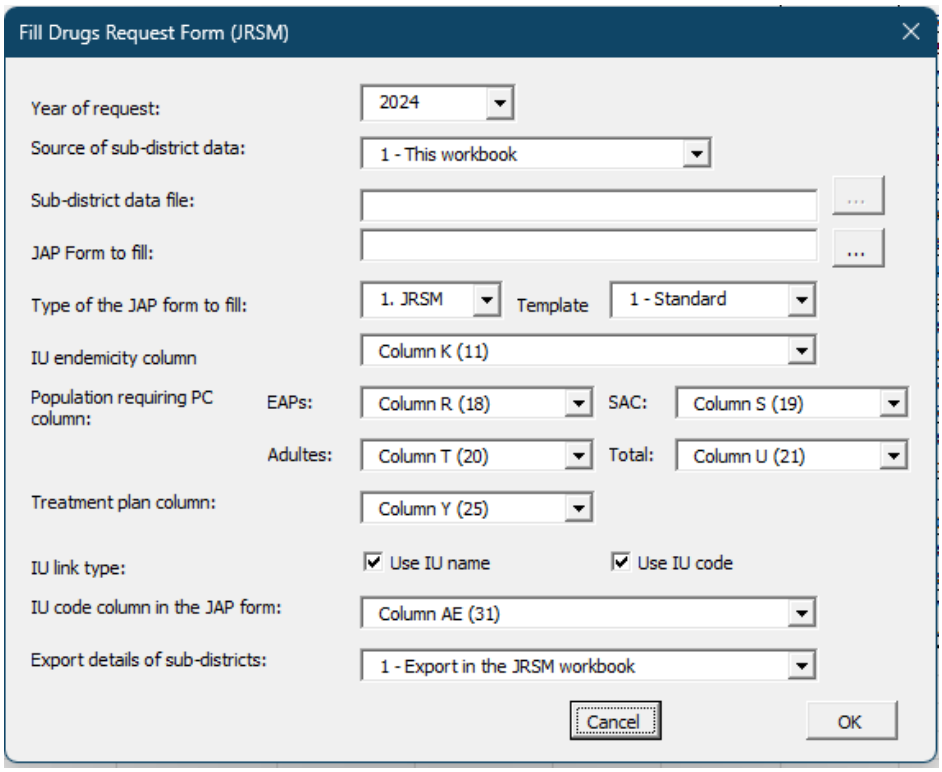
3.5 The automated tool for filling the JRSM

This is a feature that is added to allow users to automatically fill in the JRSM form with just a click. It replaces the manual actions of copy and paste between the analysis workbook and the JRSM form.

To complete the JRSM form, the user must select the "D_PROJECTIONS" worksheet and click the button **Fill PZQ Request Form**. This should be the last operation after all the calculations have been performed and the IU projections are generated.

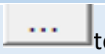
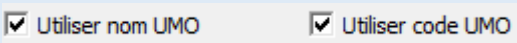


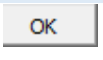
After the user clicks the button, the dialog box below will appear and allow the user to set up the process.



The table below describes the information required and how to supply it.

Table 22: Description of information to be provided

Information	Description	Comments
Year of Request	The year for which the drug application is made for.	Select a year from the list
Source of sub-district data	The generated dataset for JRSM can be transferred from the file from which the user is working or from another file.	Choose "This workbook" if the data is in the current workbook from which the user is running the process or choose "Select a different workbook" when the data is in another workbook.
Sub-district data file	In case the source of the data is a different workbook, the user must locate the workbook using the action button. 	Click the button  to locate the workbook where the data is generated.
JRSM form to fill out	Indicate the drug request application form to be completed. Only the sections of schistosomiasis will be filled.	Click the button  to locate the JRSM form to be filled in. Note that the form must be already initialized, and the demographics are already filled in the COUNTRY_INFO sheet.
Type of JAP form to fill	Indicate the form you would like to fill	Only JRSM is available
Template	Indicate the form template	Select a template from the list
IU Endemicity column	Indicate the column in JRSM that corresponds to the IU endemicity in the worksheet COUNTRY_INFO	Select the column from the list
Population requiring PC to be treated columns	Indicate the columns for the population to be treated for each age group in the worksheet COUNTRY_INFO	For each age group, select the corresponding column in the list
Treatment plan column	Indicate the column for the treatment plan in the worksheet COUNTRY_INFO	Select the corresponding column from the list
IU link type	Indicate which data elements to use to link the IUs between the sub-district analysis workbook and the JRSM form.	Check the two checkboxes  Preferably, the IU name will be used before the IU code.
IU code column in the JRSM form	Indicate the column that contains the IU code in the JRSM form.	If the IUs codes are available in the application form, indicate the corresponding column in the COUNTRY_INFO worksheet.
Export Details of the sub-districts	Indicate whether the itemized sub-district data will be exported into the JRSM form	Select an option from the list

Once the information is provided, click the button  to start the operation. At the end of the operation the drug request form is opened. You need to save it before you close it to keep the data transferred.

It is recommended to verify that all IUs have been linked. In case some IUs do not have data, check the names and codes, and correct them in the JRSM form, and run the process again.

If for specific reasons, you want to abandon the operation, click the button  .

4 Workbook maintenance

The maintenance of the workbook may occur on an annual basis or anytime there is new data. New data may come from different events: epidemiological mapping survey, environmental risk assessment, population census, new administrative units, PC implementation.

4.1 Revision of existing data and adding of new data

4.1.1 Reviewing and update of the district data

This will occur in the worksheet IU_Data whenever any of the data item in this worksheet needs an update. This will happen if there is a new population census, new demarcation.

4.1.2 Reviewing and update of the subdistrict demographic data

This will occur in the worksheet demo_data whenever any of the data item in this worksheet needs an update. This will happen if there is a new population census, new demarcation.

4.1.3 Reviewing and update of the epidemiological data

This will occur in the worksheet epi_data when there is a new epidemiological survey. The new dataset may be appended at the bottom of the existing data.

4.2 Recalculation

The calculation process remains the same. However, some calculation parameters may be revised. The projection year may be reduced as the years pass. The projection in the initial workbook spans from 2024 up to 2028 for five years. Next year's update will start from 2025 as the 2024 will already pass. The number of years for the projection can be any value from 1 to 5.